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GOVERNMENT OF PALESTINE.

ANNUAL REPORT

OF THE

DEPARTMENT OF HEALTH

FOR THE YEAR

1926.

ANNUAL REPORT - 1926.

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ANNUAL REPORT

DEPARTMENT OF HEALTH

GOVERNMENT OF PALESTINE.

1926.

I. GENERAL CONSIDERATIONS.

I. ADMINISTRATION.

(a) Personnel.

Minor changes only have occurred in the sphere of duties of the Senior Staff of the Department. The Senior Medical Officers of Districts in Palestine have remained as in 1925. On the formation of the Transjordan Frontier Force, the Senior Medical Officer of the Gendarmerie, Lt. Col. H.S. Beadles (T.F.) gave place to Captain A.P. Draper, M.C., R.A.M.C., who has been seconded from the Army as Senior Medical Officer, Transjordan Frontier Force.

Dr. Halim Abu Rahmeh continues to be seconded as Director of the Public Health Department of Transjordan.

Dr. T. Mossauba, after prolonged sick leave, died as a result of pulmonary tuberculosis.

Dr. Fuad Dejani has been appointed to replace Dr. T. Mossauba.

Dr. K. Bandaly has been appointed to replace Dr. Halim Abu Rahmeh seconded.

Miss Townsend has been transferred to Superintendent of Midwifery and Child Welfare, Jerusalem.

Miss Spackman has been appointed Superintendent of Midwifery and Child Welfare at Nablus.

Miss D.L. Whitaker vacated her appointment of Matron of the Mental Hospital, Bethlehem.

Miss M.N.V. Harse has been appointed Asst. Matron, Jerusalem.

The following was the distribution of staff:-.

Appointment.	Class.	Name.	Station.
Headquarters & District Administration.			
Director.	"G"	Colonel G.W. Heron, C.B.E., D.S.O.	Jerusalem.
Deputy Director. (Hospital & Medical Section).	"E"	R. Briercliffe, O.B.E.	do.
Senior Medical Officer (Jerusalem District).	1	J.A. Henderson.	do.
Senior Medical Officer (Samaria & Galilee).	1	W.K. Bigger, M.C,	Nablus.
Senior Medical Officer at H.Qrs in charge of Sanitary and Epidemic Section.	1	J.W.P. Harkness.	Jerusalem.
Senior Medical Officer (Haifa District, Railways and Land Quarantine).	1	W.P.H. Lightbody.	Haifa.

Appointment.	Class.	Name.	Station.

eadquarters & District Administration (Contd).

Appointment.	Class.	Name.	Station.
enior Medical Officer (Jaffa and Gaza Districts).	1	A. Rankine, M.C.	Jaffa.
sst. Senior Medical Officer (Jerusalem District).	2	J. Macqueen.	Jerusalem.
enior Medical Officer (Transjordan Frontier Force). (Seconded from R.A.M.C.)		Capt.A.P.Draper, M.C.	Zerka.
Chief Clerk.	3	Vacant.	Jerusalem.

Hospital and Medical Services.

Appointment.	Class.	Name.	Station.
Asst. Senior Medical Officer (Hospital and Schools).	3	D. Bulos, M.B.E.	Acre.
Asst. Senior Medical Officer (School of Instruction).	3	H.F. Khalidi.	Jerusalem.
Medical Officer (Hospital and Schools).	3	S. Bodossian.	Ramleh.
Medical Officer (Mental Hospital).	3	M.S. Maloof.	Bethlehem.
Medical Officer (Hospital and District).	3	F.I. Haddad.	Tulkarem.
Medical Officer (Hospital).	3	Y. Hajjar.	Jerusalem.
Medical Officer.	3	I. Weitzman.	Haifa.
Medical Officer (Hospital and Schools).	3	H.S. Khalidi.	Nablus.
Medical Officer (Schools).	3	K. Kesheshian.	Jerusalem.
Medical Officer (Hospital and Schools).	3	F. Dejani.	Jaffa.
Medical Officer (Hospital and Schools).	3	N. Hamzeh.	Gaza.
Medical Officer (Hospital and Schools).	3	K. Abu Ghazaleh.	Beersheba.
Medical Officer (Hospital and Schools).	3	A.T. Sternberg.	Haifa.
Medical Officer (Special Clinic).	3	H.M. Torian.	Hebron.
Inspector of Pharmacies.	3	Farid Haddad.	Jerusalem.
Superintendent of Midwifery.	Special	Miss K.F. Townsend.	Jerusalem.
do.	"	Miss E. Spackman.	Nablus.
Matron.	"	Miss E. Dickin.	Jerusalem.
do.	"	Vacant.	Nablus.
do.	"	Miss E. Davies.	Jaffa.
do.	"	Miss L.J. Hanson.	Bethlehem.
do.	"	Miss M.N.V. Harse.	Jerusalem.
do.	"	Miss E. Redmile.	Haifa.

Sanitary & Epidemic Section.

Appointment.	Class.	Name.	Station.
Sanitary Engineer.	2	L. Cantor.	Jerusalem.
Asst. Senior Medical Officer.	3	R. Oplatka,M.B.E.	Jaffa-Tel Aviv.
do.	3	H. Abu Rahmeh M.B.E.	Seconded as Director of Public Health Transjordan
do.	3	M. Shishmanoglou.	Jaffa.
do.	3	J. Tucktuck.	Nablus.
do.	3	Z. Haddad.	Haifa.

Appointment.	Class.	Name.	Station.
Sanitary & Epidemic Section (Contd).			
Medical Officer.	3	F.K. Abla.	Majdal.
do.	3	A. Abdel Al.	Hebron.
do.	3	G. Ayoub.	Jaffa.
do.	3	M. Erdikian.	Acre.
do.	3	I. Haurani.	Gaza.
do.	3	A. Eid.	Jerusalem
do.	3	K. Dandaly.	Nablus.
do.	3	Taher El Khatib.	Safad.
do.	3	M.K. Mishalany.	Nazareth.
do.	3	A.A. Shehadeh.	Haifa.
do.	3	F. Shubeita.	Jaffa.
do.	3	E. Sikkarieh.	Beisan.
do.	3	M. Shukair.	Nablus.
do.	3	A. Haddad.	Ramleh.
do.	3	J. Hassoun.	Haifa.
do.	3	A. Shehadeh.	Ramallah.
do.	3	I. Itayim.	Tiberias.
do.	3	S. Saleem.	Jerusalem
do.	3	S. Yassin.	Jenin.
do.	3	A. Malchi.	Jerusalem
Inspector of Public Establishments.	3	Vacant.	Jerusalem
Quarantine Section.			
Asst. Senior Medical Officer.	3	Y. Chami.	Jaffa.
Medical Officer.	3	B. Franco.	Haifa.
Laboratory Section.			
Asst. Director (Laboratory Section).	1	G. Stuart.	Jerusalem.
Government Analyst.	2	G.W. Baker.	Jerusalem.
Medical Officer (Laboratory).	3	K.S. Krikorian.	Jerusalem.
Assistant Analyst.	3	W. Itayim.	Jerusalem.

(b) Ordinances and Regulations.

The following Ordinances and Regulations affecting Public Health have been enacted during the year:-

Ordinances.	Published as Bill.		Promulgated.	
	Official Gazette.	Date.	Official Gazette.	Date.
Diseases of Animals' Ordinance (Control of Rabies in Animals).	152	1-12-25	154	1-1-26.
Coroners' Ordinance.	168	1-8-26	170	1-9-26
Dentists' Ordinance.	164	1-6-26	171	16-9-26
Workmen's Compensation Ordinance.	174	1-11-26	179	16-1-27.

Regulations.	Date.	Official Gazette.	
		No.	Date.
Prohibited Imports (Essences and Extracts of Brandy, Whisky etc.)	23-12-25	155	16-1-26.
Under Customs Duties Exemption Ordinance 1924:-			
(a) Notice re articles imported by Charitable Institutions (Equipment, Medical Supplies etc.)	5-1-26	162	1-5-26.
(b) Exemption of pipes for drainage of land.	3-5-26	163	15-5-26.
(c) Drugs, Dental, Surgical and Medical Appliances.	15-5-26	168	1-8-26.
Amendments to Regulations under Prisons Ordinance 1921.		166	1-7-26.
Release of Prisoners on Medical Grounds.	20-1-26	156	1-2-26.
Pensions (Ottoman Service) Ordinance. Examination of Pensioners by M.Os.	14-9-26.	171	16-9-26.
Regulations under Coroners Ordinance. Fees for Post Mortem Examinations etc.	8-10-26.	173	16-10-26.
Registration of Analytical Chemists (Cancellation).	16-5-26.	163	16-5-26.

The following Ordinances and Regulations were under preparation:-

1. Medical Practitioners' Ordinance.
2. Assistant Pharmacists' Ordinance.
3. Trades & Industries Ordinance.
   A new draft of the Trades & Industries Ordinance has been prepared in conjunction with the Legal Department, and Regulations under that Ordinance drawn up.
4. Regulations under Dangerous Drugs Ordinance 1925.

Recommendations were put forward for amendment to the International Sanitary Convention to control the Quarantine procedure in connection with Palestine and Transjordan and were incorporated in the new Convention. The Government of Palestine acceded to the International Sanitary Convention of 1926.

(c) Revenue and Expenditure.

The following is a summary of the estimates of Revenue and Expenditure for the financial year 1926-1927. The comparative total figures of estimates of expenditure for previous years are given below.

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Revenue.		Expenditure.		
1926-27.	£E.13830.	A. Personal Emoluments.	£E.68,987	
		B. Other Charges.	£E.28,692	£E. 97,679

Detail of Other Charges.

Travelling and Transport.	£E.5800
Lighting and Heating.	1250
Railway Fares and Freight.	3600
Drugs, Dressings & Instruments.	4045
Vaccines and Sera.	400
Equipment and Stores.	1350
Disinfectants and Maintenance of Disinfecting Machines.	1000
Hospital Diets.	6100
Clothing.	900
Epidemic Outbreaks.	500
Medical Attendance in Private Hospitals.	300
Relief.	150
Contribution to Tropical Diseases Bureau.	50
Contribution to Colonial Medical & Sanitary Advisory Committee.	26
Fees for Notification of Births & Deaths in Villages.	480
Medical Library.	60
Contingencies.	100

Special Expenditure.

"Clayton" Disinfecting Machine.	200
Special Equipment for Quarantine Stations.	2130
Purchase of Operating Tables.	155
Purchase of Animals.	96
	£E. 28692

1925-26.	£E. 9050.	A. Personal Emoluments.	£E.63,140	
		B. Other Charges.	£E.21,341	£E. 84,481
1924-25.	£E. 9570.	A. Personal Emoluments.	£E.61,791	
		B. Other Charges.	£E.20,632	£E. 82,423
1923-24.	£E.11590.	A. Personal Emoluments.	£E.64,226	
		B. Other Charges.	£E.29,032	£E. 93,258
1922-23.	£E. 8720.	A. Personal Emoluments.	£E.72,508	
		B. Other Charges.	£E.32,860	£E.105,368
1921-22.	£E. 8150.	A. Personal Emoluments.	£E.70,914	
		B. Other Charges.	£E.82,795	
			£E.153,709	
Less estimated cost of Railway Medical Service.			£E. 10,824	£E.142,885

The Palestine Government Estimates of Revenue and Expenditure for the year under review were as follows:-

Revenue.	£E. 2,565,700
Expenditure.	£E. 2,524,034

The increase in the Estimates was due, in addition to normal increments of salaries, to certain new appointments of which the following were the most important:-

Specialist Surgeon.
Tuberculosis Medical Officer.
A second Superintendent of Midwifery and Child Welfare.
7 District Nurses.

B. PUBLIC HEALTH.

1. General Diseases.

General diseases were not unduly prevalent during the year. Hospitals accommodated their average complement of patients surgical and medical, and no expansion of bed-strength was necessary except in the case of certain of the Hadassah and Kupat Cholim Hospitals, in which that necessity arose on account of the additional accommodation required for enteric and dysentery.

There was ample provision for dispensary treatment at the out-patient department of Hospitals, both Government and Voluntary, and at clinics in sub-districts, in villages and in colonies. The numbers of attendances, as shown in statistical tables, is in fact remarkable and especially so in the case of the Jewish communities which are accustomed to visit the doctor more readily than is the case amongst the Arab population. The female section of the Arab population though they are ready enough to attend hospital or dispensary for ordinary ailments, are loath to apply for medical assistance in maternity cases, but our development of Infant Welfare Centres, of which in Arab centres, there are now 10 has been widely appreciated and the attendances by infants and small children are increasing very satisfactorily. There is no doubt that in the development of Infant Welfare Centres and Children's Clinics, conducted by qualified nurses, coupled with an efficient School Medical Service lies the road towards the establishment of a healthy Arab population in Palestine.

The Jewish Community are more amply served both in Hospital accommodation and in dispensary treatment. There are few colonies that are not equipped with doctor, dispensary, and there are 19 Infant Welfare Centres, which are doing very good work.

The infantile mortality, under 1 year, throughout Palestine has fallen from 186 to 163 per 1000 births. A fall to 172 per 1000 in the cases of the Arab and to the satisfactory level of 108 per 1000 amongst the Jewish population. It is of interest that the most notable fall has been in

/Jerusalem

Jerusalem from 156 to 110, in Haifa from 161 to 146, and Ramallah from 217 to 133, where Infant Welfare Centres are established. It is, however, the case that the comparative absence of measles with its fatal complications has largely accounted for the general decrease.

There are, as the statistics show, various towns in which the Infant Mortality is still very high, in several of which, notably Nablus, Ramleh, Jaffa and Bethlehem, Infant Welfare Centres were recently opened, and in others will be opened when suitable nurses have been trained.

If one may take the death rate for the year as an indication of the health of the people, then the decline from 27 per 1000 in 1925 to 24 per 1000 in 1926, indicates a healthier year, while the rise of the birth rate from 49 to 53 suggests an increased virility and prosperity of the population. The birth rate of 60 for the Moslem population is a remarkable one.

The situation as regards the maternal mortality in child birth, and the comparative paucity of trained midwives had not materially improved since the previous year, but the Government Midwives Training School passed out 15 and the Hadassah 8 midwives during the year, and arrangements were made to take an increased number of pupil midwives at a time in the Jerusalem School and to commence the school at Nablus. At the latter school a modified course for illiterate pupils is proposed in order that the villages, as well as towns, may benefit.

The Voluntary and Charitable Hospitals continued to render very great services to the people and in several cases extended their services by the establishment of new village clinics. The Department is able to rely on their ready cooperation on all occasions and during the enteric epidemics in Haifa, Jaffa-Tel Aviv and Jerusalem received valuable assistance in overcoming the difficulty of Hospital accommodation.

The Ophthalmic Hospital of the Order of St. John continued to train Government Medical Officers in Ophthalmic Surgery, provided seven specially trained nurses for the Government District Clinics, and maintained its inspectional supervision of the work performed therein. The remarkable work performed by this Hospital in Jerusalem again shows an increase.

2. Communicable Diseases.

The outstanding epidemic of the year was that of enteric fever in the colonies of the Emek Jezreel, in Tel Aviv and in Jerusalem. The numbers of cases for these areas was Emek 206, Tel Aviv 223, Jerusalem 280, with a total incidence in the country of 1402, compared to that of 705 in 1925.

In the report of 1925, the unsatisfactory housing and sanitary conditions in new colonies and suburbs of the larger towns was pointed out.

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The high incidence of enteric was undoubtedly a direct result of these conditions in the Emek and in Tel Aviv, and to the insufficiency of the pure water supply and the consequent use of water from contaminated sources may be ascribed the high incidence in Jerusalem.

Early in 1926, a Commission consisting of Department of Health officers and representatives of voluntary medical organizations was appointed to consider and advise on the situation as regards enteric in the country.

Subsequently, when the epidemic became more serious in the Jewish colonies, the Vaad Habriuth, the Medical Advisory body to the Zionist Executive, cooperated with the Government.

Very valuable recommendations were made by the Commission, and as far as possible put into effect during the year. The vigorous anti-typhoid inoculation campaign in the Emek resulted in a rapid termination of the epidemic in that region while in Tel Aviv almost equally satisfactory results were registered.

The Hospital accommodation in Epidemics was found to be very inadequate, and measures are on foot more especially in Jaffa-Tel Aviv, in Haifa and in Jerusalem, to improve the situation in this respect.

Six additional Jewish Sub-Inspectors were put into training for appointment in colony areas, and the Government is considering additional administrative and legal measures to improve sanitation in colonies and villages without Local Councils. It is, however, a matter of extreme difficulty to get the Colonists themselves, though assisted by capital funds for installations, to improve the scavenging and sanitary maintenance of their own colonies.

If enteric fever and the dysenteries are to be controlled it is imperative, as stressed in the Report for 1925 that "outside Municipal areas Local Councils in settlements under the Local Councils Ordinance should be formed under Government supervision, sanitary bye-laws drawn up and enforced by the Council, and sanitary labour employed." All Jewish colonists have most adequate medical arrangements provided by the Hadassah and Kupat Cholim; an equally adequate sanitary and scavenging service is required to be provided by the colonists themselves.

The incidence of measles was small compared to 1925. Arab villages are more readily notifying the early cases. This disease, however, remains a serious one to the Arab population, which requires considerable education before it changes its supine attitude towards diseases of childr .

There were two cases of small pox, but no extension of the disease. The country is well vaccinated, and the re-vaccination campaign, resulting in more than 170,000 vaccinations, chiefly children, should have rendered Palestine safe from an epidemic.

There was no advance in the investigation of tuberculosis. A new post of Tuberculosis Officer was approved for inclusion in the Estimates, but is not yet filled. There has been a gradual increase in cases notified, but the actual incidence cannot be estimated without complete investigation. It will then be possible to initiate measures of control and treatment.

The incidence of Rabies amongst dogs and jackals continued high, and the numbers attending for treatment with carbolized vaccine at the 11 different centres established remained approximately the same as in 1925. There were no deaths from hydrophobia, and the failure rate was nil amongst persons treated, a large proportion of whom were bitten by definitely rabid animals. This is a remarkable testimony to the efficacy of the vaccine prepared at the Government Laboratories and the system of treatment.

The malaria situation continued to be satisfactory in towns and rural areas under control. The mosquito-proofing of village wells effected willingly by the people themselves on advice and instruction by the Department showed considerable advance. Canalization similarly developed and many kilometres of canals and ditches were completed. Of the larger schemes there are several ready for development when funds become available.

C. INDUSTRIAL CONDITIONS.

The new Trades and Industries Ordinance has not yet been passed. The draft was finally amended for despatch to the Secretary of State.

The absence of legal powers to control outside Municipal areas certain trades connected with food and milk supply was acutely felt during the year. Milk, for instance, supplied from insanitary dairies in a colony or village could not be controlled at its source while the same milk distributed for retail sale in a town could only be ineffectively controlled by the examination of a comparatively small number of samples taken from shops.

The financial depression amongst some of the new Jewish colonies and the unemployment in larger towns undoubtedly had an adverse effect on the health of the inhabitants, and the prevalence of enteritic diseases may in part be ascribed to that depression. The adverse conditions of housing in huts, many of which had to remain in a dilapidated state, the overcrowding and the lack of money to provide for the ordinary household conveniences and for conservancy inevitably resulted in a lowered body resistance to infection by communicable disease.

D. HOUSING AND TOWN PLANNING.

A considerable improvement in the conditions under which new construction proceeds was noticeable. The architects and builders have profited by the constant exercise of control by the Department over the sanitary installations prescribed by Building Permits Committees constituted under the Town Planning Ordinance.

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The cooperation that has been established between the Department's officers and the Municipal Sanitary Surveyors has resulted in a higher standard of sanitation in public establishments, in markets and in trades, and householders are gradually being educated to maintain a higher standard of cleanliness on their properties.

Improvements in existing insanitary and overcrowded quarters is necessarily very slow and dependant on the magnitude of municipal credits available for expropriation, and for the opening up of new roads and of gardens. Very little has yet been done in this direction in the larger Municipalities but there are notable instances amongst the smaller ones of considerable development.

II. VITAL STATISTICS & EPIDEMIC DISEASE.

(a) Vital Statistics.

The population at 1st July 1926, was estimated to be approximately 865,000 distributed as follows:-

Resident in Towns & Villages.	761,896	Estimated.
Nomadic Tribes.	103,331	Census 1922.
	865,227	

Classified by religious creeds:

Moslems.	Christians.	Jews.	Others.	Total.
633,744	75,576	147,398	8,509	865,227

Births, Deaths and Infantile Mortality.

Birth and Death ratios are calculated upon the settled population only; that is to say the population of the Bedouin tribes (103,331 Moslems) and such records of Births and Deaths as are received in regard to this group are excluded from the figures which are given below.

There were recorded during the year 40,741 births and 18,620 deaths. The corresponding figures for the previous year were 35,479 and 19,611.

Recorded Deaths under one year of age were 6,642 compared with 6,693 during the previous year.

The comparative ratios for four years are as follows:-

	Estimated population at 1st July.	Deaths per 1000.	Births per 1000.	Deaths under one year per 1000.
1923.	662,013	25.67	47.43	184.7
1924.	681,245	25.04	51.31	184.8
1925.	719,508	27.25	49.31	188.6
1926.	761,896	24.43	53.47	163.0

The estimated increase of population during the last three years was calculated to be:

Year.	Natural Increase.	Increase per 1000.	Excess of Immigration over emigration.	Increase per 1000.	Total Increase per 1000.
1924.	17,283	25.3	10,301	15.1	40.4
1925.	15,868	22.0	30,546	42.5	64.5
1926.	22,121	29.0	4,481	5.9	34.9

The increase of population by excess of births over deaths will be noted to be considerably higher than that prevailing in European countries.

The natural increase calculated per thousand for the religious groups is as follows:-

Year.	Christians.	Moslems.	Jews.	Other Religions.	Total.
1924	23.6	25.6	25.7	19.7	25.3
1925	18.4	23.5	18.1	26.8	22.0
1926	22.1	31.6	23.9	20.0	29.0

A consideration of the Birth, Death and Infantile Mortality ratios of these groups of the population in relation to the foregoing table is of interest.

		Christians.	Moslems.	Jews.	Other Religions.
1924.	Births.	40.4	55.5	38.3	39.0
	Deaths.	16.8	29.9	12.6	19.3
	Infantile Mortality.	151.9	199.0	105.7	1[illegible]6.0
1925.	Births.	37.2	54.7	33.2	59.3
	Deaths.	18.8	31.2	15.1	32.5
	Infantile Mortality.	162.4	200.5	131.3	124.2
1926.	Births.	40.0	60.2	36.0	55.0
	Deaths.	17.9	28.6	12.1	34.9
	Infantile Mortality.	158.0	172.5	108.1	170.9

It will be noted from these figures that in spite of a lower birth ratio the natural increase of the Jewish section is well maintained in comparison with the other groups and is achieved in a more satisfactory manner namely by lower death ratios. There is therefore less waste of life in this group. The extensive medical and hospital services provided for the Jews and the development of maternity and child welfare centres is no doubt a factor in securing this economy of life and points the way to voluntary effort on the part of other sections of the population.

During the year estimations of the populations of Jerusalem, Tel Aviv and Haifa were made by the authorities indicated for the purposes stated in each case.

Town.	Date.	Authority making Estimate.	Purpose.	Moslems.	Christians.	Jews.	Others.	Total.
Jerusalem.	1926.	Dept.of Public Works and the Municipal Council.	Preparation of main drainage scheme.	14500	15500	44000	not stated	74000
Tel Aviv.	1926.	Township and Palestine Zionist Executive.	Economic enquiries.	Nil.	Nil.	40000	Nil.	40000
Haifa	April 1926.	Dept.of Health and Municipality.	Housing enquiry and Drainage Scheme.	11506	9567	12479	221	33773

Rates calculated upon these populations give the following figures:-

	Births per 1000 of population.	Deaths per 1000 of population.
Jerusalem.	34.4	15.7
Tel Aviv.	39.8	14.7
Haifa.	50.0	20.4

These figures suggest an overestimation of population of Jerusalem Town.

Registration of Births and Deaths.

Notification of Births and Deaths is compulsory under Section 1 of Public Health Ordinance No.1 of 1919. During the year a trial was made in selected areas of notification of Dead Births according to the definition recommended by the League of Nations. Senior Medical Officers are not unanimous in their opinions as to the possibility of obtaining reliable figures. The procedure will be continuedin the selected areas during 1927 after which it may be possible to form an opinion as to whether general regulations applicable to the whole country should be issued.

BIRTHS AND DEATHS - 1926.

	Totals for Towns.	Total for Districts excluding Beersheba.
DEATHS.		
Under 1 month.	737	1081
1 month to 1 year.	1609	3215
1 to 2 years.	960	2115
2 to 5 years.	683	1494
5 to 10 years.	163	350
10 to 20 years.	274	462
20 to 50 years.	989	1648
Over 50 years.	1307	1517
Unknown.	3	13
Total Deaths 1926.	6725	11895
Total Deaths 1925.	6762	12849
BIRTHS.		
Total Births 1926.	14362	26379
Total Births 1925.	12079	23400
INFANTILE MORTALITY.		
Rate per 1000 Births 1926.	163.34	162.85
Rate per 1000 Births 1925.	194.13	185.84

Religions.	Christians.	Moslems.	Jews.	Others.	Totals	Percentage.
Populations.	75576	530413	147398	8509	761896	
DEATHS.						
Under 1 month.	118	1454	232	14	1818	9.76
1 month to 1 year.	360	4057	341	66	4824	25.90
1 to 2 years.	185	2703	134	53	3075	16.51
2 to 5 years.	89	1941	107	40	2177	11.69
5 to 10 years.	29	438	31	15	513	2.75
10 to 20 years.	53	580	85	18	736	3.95
20 to 50 years.	196	2121	272	48	2637	14.16
Over 50 years.	325	1880	578	41	2824	15.16
Unknown.	-	12	2	2	16	.08
Total Deaths.	1355	15186	1782	297	18620	
Deaths per 1000.	17.92	28.63	12.09	34.90	24.43	
BIRTHS.						
Total Births.	3025	31949	5299	468	40741	
Births per 1000.	40.02	60.23	35.95	55.00	53.47	
INFANTILE MORTALITY.						
Total Deaths under 1 year.	478	5511	573	80	6642	
Rate per 1000 Births.	158.01	172.49	108.13	170.94	163.03	

(b) Epidemic Service.

Organisation and procedure was drawn up in detail for coping with serious epidemic outbreaks. The circular instructions deal with the provision and organisation of special staff in epidemic areas, the arrangements for transport, laboratory facilities, emergency hospitalisation, the organisation of special units for epidemiological investigation, water control, anti-rat measures, vaccination, disinfection, accommodation and control of contacts and for accounting and records. Temporary hutting constructed of straw matting on framework provides in this climate a simple type of emergency accommodation for epidemic purposes. To facilitate procedure, standard sizes of huts were selected, drawings and specifications prepared and issued with the circular instructions to all district offices.

The equipment of the mobile epidemic units with which each district is supplied was employed in Hebron sub-district where temporary village hospitals were opened at Ajjur and Deir Dubban in the early months of the year for the treatment of measles.

In Hebron town cases of measles with complications were admitted to the Epidemic Post in the hope of reducing mortality. The results were not very encouraging. Though undoubtedly some of the cases were saved, it is the prevention of complications developing which alone will effect any marked reduction in the case mortality. Home visitation by district nurses, the education of the parents in simple matters of sick room hygiene, and the admission of cases considered likely to develop complications (on account of age, severity of the infection or physical condition) for hospital treatment at an early stage of the disease, are measures which may prove more successful in future outbreaks attended with high mortality. Convalescent serum has been used but difficulties of supply prevent its general employment. The use of whole blood has not been tried in village epidemics.

(c) Training of Personnel.

A course of instruction in sanitary duties was held in spring. The particulars are as follows:-

	Result of Examination for Departmental Certificate.	
Personnel attending Course.	Examined.	Passed.
6 Medical Orderlies Transjordan Frontier Force.	6	5
3 Tamurgies. Department of Health.	3	3
5 Quarantine Guards " " "	5	4
1 Disinfector " " "	1	1
3 Male Attendants " " "	3	3
2 Sanitary Sub-Inspectors Transjordan Govt.	2	2

(d) Disinfection.

No changes were introduced in methods of disinfection. Equipment and disinfecting machines were maintained in working order. The repair bill of some of the war worn machines still in use is high and provision must now be made for replacement of some of these old army machines each year.

An experiment was carried out to test the value for Departmental purposes of HCN evolved from Calcium Cyanide dust manufactured by the Cyanamid Company, U.S.A. The powder required was kindly supplied by the Department of Agriculture. The test was carried out upon a bug infested room containing beds and clothing in wooden boxes. Test tubes containing adults, nymphs and eggs were placed in various parts of the rooms and in the boxes of clothing. Specimens of adults and unhatched eggs were taken for control. The powder was found to be reasonably safe for use, the cyanide gas is evolved slowly and has marked powers of penetration. No living adults were found after 19 hours exposure using 1 lb. of calcium cyanide powder per 1500 cubic feet of room space.

Controls not exposed to the gas were alive after 72 hours. None of the eggs exposed in test tubes hatched out while eggs taken from the room and not exposed had hatched out in test tubes 13 days after the experiment.

It is considered that in certain circumstances the powder provides a convenient and cheap method of destroying vermin and their eggs in infested rooms or clothing and a supply of Calcium Cyanide Dust is being obtained for more extended trial by district disinfecting staff.

A statistical record of disinfecting work performed follows.

(e) Infectious and Communicable Diseases.

10,407 cases with 1,164 deaths were notified from infectious and communicable disease as compared with 11,705 cases and 1,576 deaths during the previous year. Beyond an increase of cases of dysentery and enteric fever no unusual outbreaks of disease occurred.

Chicken Pox.

180 cases and 2 deaths compared with 248 cases and one death during 1925.

Diphtheria.-

79 cases with 5 deaths. Though the cases are more than last year (40), the number of deaths has fallen by half. In general diphtheria is mild and the fatality rate 6.3% compares favourably with that of patients treated in the Metropolitan Asylums Board Hospitals during 1916-20 which is given by Newsholme as 8.0%. Diphtheria fortunately does not constitute a problem affecting public health so that expenditure on immunisation is at present unnecessary. At the same time it would be of interest to determine by Shick tests at various ages the relative susceptibility of the population.

Dysentery.

1731 cases, 37 deaths. During 1925, 998 cases and 42 deaths were notified. The main increase was in Tel Aviv, Tiberias and the new Jewish settlements in Jaffa District. Notification appears to be more complete. The season of highest incidence extends from May to December with the peak in October and November. Laboratory returns throughout the country indicate that amoebic dysentery is more common than bacillary. The occurrence and seasonal incidence of the disease does not altogether suggest this. The chief age groups of incidence are under 10 years and between 20 and 30 years. 91% of cases notified and 83% of deaths were of the Jewish section of the population.

Typhoid Fever.

The increase of typhoid fever reported in 1925 continued in 1926. 1402 cases with 110 deaths were notified compared with 705 cases and 70 deaths in the previous year. The case fatality rate dropped from 10% to 7.8%. The high incidence of the latter months of 1925 was carried forward into the month of January 1926, after which there was a decrease until June, the monthly incidence then rose to its peak in September when 188 cases were reported.

No. of Cases & Deaths per 1000 of population. Typhoid Fever.

	All Palestine. 1926	England & Wales. 1921	Aggregate of 67 American Cities.	Jerusalem. 1926	Tel Aviv. 1926	Haifa. 1926
ase Rate per 000 of population.	1.8	0.10	0.26	3.10	4.07	5.41
eath Rate per 000 of population.	0.14	0.02	0.04	0.27	0.27	0.17

When consideration is given to relative hygienic conditions, the rates for the whole country compare not unfavourably with those for England and Wales and a group of American cities quoted from Newsholme. In the towns named the case rates per 1000 of population exclude as far as possible cases imported for hospitalisation.

The group of Jewish villages situated in the area extending from Haifa to Beisan experienced a serious outbreak of the disease in May, June and July. During these months 200 cases occurred in a population of 4650. Special measures were taken in the area comprising early diagnosis and hospitalisation, isolation of carriers and general anti-typhoid inoculation. In none of the outbreaks occurring has it been possible to incriminate definitely water supplies. The measures to cope with the epidemic included therefore endeavours to improve the general sanitary conditions in these pioneer settlements. The inoculation of these villages commenced in June. The usual difficulties were experienced but by the end of July 50% of the population had received two doses of vaccine. During July the incidence of new infections declined and by the middle of August the outbreak had been definitely stamped out. By the end of August 4250 persons in this group of 4650 had received two doses of vaccine.

An inoculation campaign was undertaken in September in Tel Aviv Township where the increasing incidence in June, July and August, was causing concern. A considerable amount of propaganda in favour of inoculation was first undertaken and the inoculation centres were opened to the public on 1st September. 15,139 of the inhabitants (40,000) had received two doses of vaccine by the end of October and 3000 more had received the first dose. The total inoculations when the centres were closed in November were: 1st dose 18,728, 2nd dose 15,610. It is considered that some part of the improvement shown in the following figures may fairly be placed to the credit of inoculation.

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Number of cases notified in Tel Aviv Sept-Dec. in the years 1925 and 1926.

	1925.	1926.
September.	13	37
October.	32	28
November.	18	17
December.	42	1

Acknowledgement is due to be made for general and particular assistance rendered by the Vaad Habriuth of the Palestine Zionist Executive, the Hadassah and the Kupat Cholim Medical Organisations in all outbreaks affecting Jewish population groups. The Jewish Medical Society also cooperated with the Government and the other organisations named in the inoculation of the inhabitants of Tel Aviv. The voluntary submission to inoculation by 50% of the inhabitants of Tel Aviv was largely due to the energetic publicity campaign organised by the Medical Officer of Health of the town.

In view of the prevalence of typhoid in centres to which newly arriving immigrants proceed, anti-typhoid inoculation was recommenced at the ports in February. 8364 immigrants were inoculated during the year. Apart from these and the routine inoculation of contacts of cases the total anti-typhoid inoculations given in all areas amounted to 24,766 receiving 1st dose of whom 21,561 completed the 2nd dose. All vaccine used was supplied by Central Laboratories. Owing to the comparative rarity of cases of the paratyphoid fevers the Triple T.A.B. vaccine was not used except at the ports.

Owing to the increase of typhoid fever in 1925 a Committee of Enquiry composed of three officers of the Department, Dr. A. Felix, Chief Bacteriologist of the Hadassah Medical Organization and Dr. V. Mandelberg, Director of the Kupat Cholim Medical Service, was appointed and submitted a report to Government on 19th July. The views of the Committee may be briefly summarised as follows:-

The incidence of the disease was that of endemic typhoid. Though water supplies were invariably inadequate and in many cases not of satisfactory quality, there was no evidence to incriminate water as the definite cause in any locality. Similarly no outbreak of consequence could be attributed to milk or other foods though in some towns the sale of vegetables fertilised with sewage constituted a constant possible means of spreading infection. Infection from carriers and by contact from cases was regarded as an important factor assisted by late notification, delayed hospitalisation of cases, and overcrowding in insanitary quarters of towns and in new settlements. The recommendations of the Committee comprised (a) assistance of Government by loans for water supply and drainage schemes, (b) improvement of Municipal Sanitary Services and control of food supplies, (c) more strict sanitary control of new buildings and new settlements, (d) the encouragement of the formation in smaller communities of Local Councils with responsibility for maintenance of sanitary services, (f) improvement of notification of the disease, (g) the increase in certain areas of hospital accommodation for infectious diseases, (h) measures for the identification and control of carriers, (i) more extensive use of inoculation in endemic areas and in particular the inoculation of immigrants at ports of entry.

Action has been taken by Government or is in progress on the Committee's recommendations.

In May the Government decided to obtain the services of a consulting engineer to advise upon main drainage schemes for Jerusalem, Jaffa and Haifa. Assistance has been given in many localities for water supplies. Municipal activities in Public Health matters are subject to Government guidance. An Ordinance for the extended control of public establishments has been submitted to Colonial Office for approval. There has been great improvement in the sanitary control of new buildings in town areas. The sanitary arrangements and plans for new settlements must now receive Government approval before schemes are embarked upon. The sanitary conditions of Jewish settlements is engaging the special attention of the Department, and a scheme of cooperation in this most important work has been arranged with the Vaad Habriuth of the Palestine Zionist Executive. Government has approved the employment of six Jewish inspectors for rural work. A Village Roads and Works Ordinance has been published as a bill which provides powers to obtain labour for approved schemes. Official forms notifying infectious diseases are now exempt from post charges. Plans are in preparation for additional infectious disease hospital accommodation which has been approved by Government in Haifa, Jerusalem, Nablus and Jaffa. Facilities for free anti-typhoid inoculation are afforded to the public.

Paratyphoid Fevers.

117 cases with 6 deaths were notified compared with 102 cases and 6 deaths in 1925. Jerusalem supplied 48 cases and Tel Aviv 23.

Measles.

There was a welcome decrease in this disease. 1564 cases with 207 deaths were reported compared with 3996 cases and 536 deaths during the previous year. The fatality rate remains about 13%.

Mumps.

There was a large increase of cases notified 1445 compared with 163 during 1925.

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Plague.

No cases of plague occurred in ports of the country. One case treated in hospital at Haifa was disembarked from a steamship calling at Haifa Port.

Puerperal Fever.

23 cases with 19 deaths were notified compared with 14 cases and 3 deaths in 1925.

Relapsing Fever.

Cases decreased by half, 11 notified compared with 22 in 1925.

Scarlet Fever.

There was a considerable increase in cases reported, 305 cases with 12 deaths compared with 57 and 1 death during the previous year. Case mortality was 3.9%.

It is considered that this fatality rate which is relatively high is partly due to non-notification of mild cases.

It is of interest to note that the months of highest incidence were June, July and August with 55, 65 and 60 cases respectively totalling over 50% of all cases notified during the year. The chief centres affected were Jerusalem 177 cases, Haifa 33 cases, Nazareth 28 cases, Tiberias 25 cases.

Typhus Fever.

Cases notified increased. 86 cases, 1 death were reported against 50 cases 0 deaths in 1925. The disease in general remains mild in type. In 5 years 241 cases with 4 deaths have been recorded. The season of greatest incidence is from June to December. The new settlement of Nahalal provided 18 cases in six months. In one or two cases a few lice were found but more frequently the inability to find this proven vector of the disease was reported. A low rate of infestation would account for the sporadic nature of the disease. The population of this settlement is engaged in farming and in view of reports by workers in other countries the possibility of another vector than the louse is borne in mind.

Whooping Cough.

There was a decrease in this disease. 644 cases with 12 deaths were reported against 902 cases and 32 deaths in 1925.

Small Pox.

Two cases were notified from a village in Hebron District. Early notification enabled prompt measures of isolation and vaccination to be taken. The source of infection was Amman, Transjordania. In February a case was reported by the Medical Officer of the Scottish Mission Hospital, Tiberias. The source of infection could not be traced.

Anthrax.

Three cases of "malignant pustule" were reported one of which terminated fatally. Sobernheim's serum was found effective in cutting short the course of the disease in the two cases which came under treatment at an early stage.

Schistosomiasis.

21 cases were reported of which 10 were infected in Palestine. The area of infection is as in previous years the Jaffa District.

Encephalitis Lethargica.

One case was reported in Jerusalem town.

Tuberculosis.

543 cases with 236 deaths were reported compared with 570 cases and 216 deaths in 1925. There is no doubt that incomplete notification accounts to a great extent for the high ratio of deaths to cases. Taking the conservative figure of ten cases for every death the number of cases in the country would be approximately 2,360. Of these approximately 1780 would be pulmonary infections. About 500 of all cases would require hospital or sanatorium treatment, using the basis of calculation given by Rosenau. Apart from 30 beds in the Hadassah Hospital, Safad, no special accommodation in Hospitals is provided for tuberculosis, there is therefore on this estimate a field for useful activity on the part of communities and charitable organisations.

Of the deaths notified in Palestine 214 were reported from towns and 22 from villages. Newsholme states on the basis of American and English statistics for 1920 that 1 in 11 or 1 in 12 of all deaths registered were due to tuberculosis. Rosenau 1927 states that in U.S.A. 9% and in Germany 12% of all deaths are caused by tuberculosis. Considering deaths notified from towns in Palestine as those in which the cause is likely to be correctly stated, the total deaths recorded were 6,725 of which 214 were attributed to tuberculosis, a ratio of 1 in 30 or 3%. Making allowance for some degree of incorrect statement of cause of death it would appear that the incidence of tuberculosis is not unduly high in towns of Palestine. It is to be noted, however, that deaths notified annually for all Palestine: 191, 193, 176, 217, 216, 236 in the years 1921-1926 indicate that the prevalence of the disease is increasing.

The percentage of positive findings in sputa sent to Laboratories gives a similar indication.

No. of times Tubercle Bacilli were found in Sputa sent for examination. All Laboratories in Palestine.

Year.	No. of specimens examined.	No. found positive.	No. positive per 100 specimens.
1922.	1622	232	12.7%
1923.	1423	197	13.8%
1924.	1959	231	11.7%
1925.	2109	342	16.2%
1926.	2671	463	17.3%

Of cases and deaths recorded in towns 311 cases and 163 deaths were infections of the respiratory system and 131 cases and 51 deaths other forms of tuberculosis. That is to say about 70% of cases and 75% of deaths are pulmonary infections, figures which approximate to the usual percentages.

For the whole country the classification of deaths from tuberculosis by religions is as follows:-

	Deaths.	Percentage of all Deaths caused by Tuberculosis.	Death Rate from Tuberculosis per 1000 of population.
Christians.	47	3.46	.62
Moslems.	117	.77	.22
Jews.	72	4.04	.48

These figures include notifications from villages and therefore do not give a complete indication of the prevalence of the disease particularly in the Moslem group. It is considered that the figures for the Jewish Section are subject to least error owing to the adequate medical services provided by various organisations throughout the country for this group of the population.

Leprosy.

A survey of the situation in regard to leprosy was carried out. The total number of cases found was 47 of which 24 were inmates of the Leper Home of the Moravian Mission in Jerusalem. Arrangements have been made for treatment as out-patients at Government dispensaries of cases which for various reasons cannot or will not be admitted to the Moravian Hospital in Jerusalem.

(f) Vaccination.

On account of the prevalence of small pox in Egypt and adjacent territories a vaccination campaign was ordered in the spring of the year, to deal specifically with children of Bedouin tribes and the re-vaccination of all school children and of all children in villages except those under 5 years of age showing definite signs of successful vaccination. During January and February all third class travellers entering the country from Egypt were vaccinated.

The total number of vaccinations performed during the year was 171,260. Of 79,850 primary vaccinations the results were observed in 70,084 of these 60,870 or 87% were successful.

CASE & DEATH INCIDENCE OF INFECTIOUS DISEASES BY MONTHS - 1926.

	January.		February.		March.		April.		May.		June.		July.		August		September.		October.		November.		December.		TOTALS.	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Cerebro Spinal Fever.	-	-	1	-	-	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	1	-	3	2
Chicken Pox.	12	-	19	-	19	-	24	-	19	1	47	-	6	-	12	1	-	-	7	-	4	-	11	-	130	2
Diphtheria.	-	-	3	-	3	1	4	-	3	-	8	-	1	-	7	-	14	1	13	-	10	1	13	2	79	5
Dysentery all classes.	46	1	38	-	22	3	48	1	164	6	138	1	130	2	165	3	206	6	312	8	301	3	101	3	1731	37
Typhoid Fever.	100	9	66	9	34	1	35	-	61	3	159	10	241	17	192	12	188	17	169	20	102	9	55	3	1402	110
Paratyphoid Fever.	18	2	6	-	6	-	5	-	4	-	12	1	8	-	2	-	15	-	16	1	18	1	7	1	117	6
Erysipelas.	7	1	12	-	12	1	7	-	11	1	15	1	10	-	10	-	18	-	17	-	11	2	14	2	144	8
German Measles.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Measles.	550	68	261	75	94	9	85	12	67	12	49	2	38	-	16	2	6	2	80	-	147	14	171	11	1564	207
Mumps.	51	-	82	-	186	-	149	-	194	-	63	-	29	-	21	-	29	-	101	-	300	-	240	-	1445	-
Plague.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-
Puerperal Fever.	2	2	4	3	-	1	2	2	1	-	3	2	1	1	-	-	2	1	-	-	4	3	4	4	23	19
Relapsing Fever.	-	-	-	-	-	-	-	-	1	-	-	-	1	-	2	-	3	-	2	-	1	-	1	-	11	-
Scarlet Fever.	6	1	5	-	16	2	4	-	9	1	55	2	65	3	60	2	18	-	20	1	34	-	13	-	305	12
Small Pox.	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-
Typhus.	2	-	-	-	6	-	2	-	1	-	5	1	7	-	10	-	4	-	15	-	10	-	24	-	86	1
Whooping Cough.	45	-	7	1	83	3	109	-	53	-	98	2	36	-	45	1	28	-	17	1	82	1	41	3	644	12
TOTALS.	841	84	505	88	481	22	474	15	588	24	653	23	573	23	542	21	531	27	769	31	1025	34	756	29	7738	421

INCIDENCE OF INFECTIOUS & CONTAGIOUS DISEASE OF A CHRONIC OR SPECIAL CHARACTER - 1926.

DISEASE.	JERUSALEM DISTRICT.		JAFFA DISTRICT.		HAIFA DISTRICT.		SAMARIA & GALILEE DISTRICT.		TOTAL FOR DISTRICTS.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Anthrax.	2	1	-	-	-	-	1	-	3	1
Schistosomiasis.	7	-	4	-	5	-	5	-	21	-
Blackwater Fever.	-	-	1	-	1	-	-	-	2	-
Epidemic Ulcer.	-	-	-	-	26	-	1	-	27	-
Gonorrhoea.	21	-	5	-	413	-	-	-	439	-
Influenza.	74	9	11	5	74	5	20	1	179	20
Leprosy.	22	3	-	-	1	-	3	2	26	5
Lethargica Encephalitis.	1	1	-	-	-	-	-	-	1	1
Pneumonia.	254	226	186	137	59	8	167	80	666	451
Acute Poliomyelitis.	-	-	-	-	-	-	1	-	1	-
Tetanus.	2	2	20	17	6	2	6	4	34	25
Tuberculosis.	90	79	131	93	217	39	105	25	543	236
Syphilis.	405	-	46	2	265	1	8	-	724	3
Ankylostomiasis.	-	-	2	-	-	-	-	-	2	-
Actinomycosis.	-	-	-	-	-	-	1	1	1	1
TOTALS.	878	321	406	254	1067	55	318	113	2669	743

No cases have occurred of the following diseases:- Cholera, Glanders, Filariasis, Beri Beri, Pellagra, Undulent Fever, Hydrophobia and Dengue.

VACCINATIONS - 1926.

	Results of Observations.	Towns.	Villages.	Persons entering Palestine.		Totals.
				Haifa Port.	Jaffa Port.	
Primary Vaccinations.	Successful.	16292	44468	-	110	60870
	Unsuccessful.	4267	4938	-	9	9214
	Not Observed.	2971	6755	-	40	9766
Re-Vaccinations.	Successful.	19553	30710	1615	1826	53704
	Unsuccessful.	12177	8435	1825	6612	29049
	Not Observed.	3200	3208	1115	1134	8657
TOTALS.		58460	98514	4555	9731	171260

(g) Malaria and Antimalaria Measures.

The decrease of the amount of malaria in the country generally, has continued and is shown by a comparison of the figures for past years, (a) of the spleen rate of children and (b) of the percentage of malaria cases among dispensary patients.

(a) Spleen Rate.

Town School Children.

Year.	No. of Towns.	No. of Children examined.	No. of children with enlarged spleen.			Spleen Rate.
			Slight.	Moderate.	Great.	
1925	17	6549	254	51	6	4.6%
1926	18	10971	146	35	5	1.7%

Village Children.

Year.	No. of Villages.	No. of Children examined.	No. of children with enlarged spleen.			Spleen Rate.
			Slight.	Moderate.	Great.	
1925.	541	33,685	2685	1083	277	12%
1926.	563	37,672	2248	1144	326	9.9%

(b) Percentage of malaria cases among dispensary patients.

Year.	Total No. of Dispensary Patients.	No. of patients suffering from malaria.	Percentage of malaria patients.
1922	283,156	20,297	7.17
1923	270,945	13,280	4.90
1924	285,215	11,732	4.12
1925	344,150	7,835	2.27
1926	388,729	7,956	2.04

In the upper part of the Jordan Valley from Metullah to Beisan and in the Valley of Jezreel from Beisan to Haifa malaria was, however, unduly prevalent during October, November and December. This undue prevalence was preceded and accompanied by greatly increased numbers of A.elutus, A.sergenti and, to a less extent, of A.superpictus. Certain of the areas invaded were demonstration areas of the Malaria Research Unit where very thorough anti-larval measures were in force and there was evidence that the Anopheles found in these areas had come from breeding places 3 to 5 kilometres distant. In spite of the lateness of the season most of the malaria was benign tertian. A similar high incidence of malaria in the same region was recorded in 1922.

It was suggested by the Malaria Commission of the League of Nations that certain of the Palestinian species of Anopheles - particularly A.bifurcatus - might breed only at certain periods of the year and that anti-larval measures might prove sufficient if limited to these periods.

Careful observations have been made by the Assistant Malaria Surveyor in Jerusalem and he has found active larvae of A.bifurcatus in cisterns and in receptacles in the open air in Jerusalem in every month except January. Thus in a rain water cistern which was quite dry in December and which filled during the winter rains, he found fourth stage bifurcatus larvae early in February. Recently laid eggs of A.sergenti were found in seepage on the shore of Lake Tiberias as late as 3rd December and active breeding of A.superpictus was found early in March. A malaria infection followed by black water fever in a previously uninfected English visitor took place at the northern end of Lake Tiberias in January. Thus there is no period of the year when Anopheline breeding or activity is entirely absent from Palestine.

Routine anti-larval measures have continued as in previous years. In both towns and villages the progress made in permanently mosquito-proofing cisterns and wells with properly fitting iron doors of a standard pattern for each sub-district and with pumps when required, has again been very satisfactory. At the end of the year there were 60,382 possible breeding places on record in the towns and 21,158 of them had been permanently mosquito-proofed while in the villages there were 23,229 such places of which 12,649 had been permanently dealt with. 7039 pumps had been fitted. 846,282 "oilings" were carried out for which purpose 58 tons of "Crude" and "Solar" oil were used. The use of Paris Green as an anopheline larvicide has developed considerably during the year and has proved an efficient and cheap method of controlling breeding in small marshes, in the overgrown pools in wadi beds and along the banks of rivers and streams.

Drainage and reclamation work on the large Kabbara concession area was continued slowly during the year by the Palestine Jewish Colonization Association, and a large reclamation scheme was started by the Haifa Bay Development Company to the north of the Kishon River and at Fawara, which if carried through to a finish, will have important results.

Smaller drainage schemes were undertaken on the advice and with the assistance of the Medical Officers of Health, the Malaria Research Unit or the Malaria Survey Section, at Tel el Mutasellim (Megiddo), Zerain, Beisan, Cherkas, Hedera and Jenin, and an experimental observation and control was carried out at Tantura.

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Two important malaria surveys were made towards the end of the year, viz: of Wadi Musrara which lies in a developing area to the north of Tel Aviv and of Nebi Rubin which is important on account of its large annual festival and as the site chosen for a Moslem Agricultural School. They were carried out by the Controller of the Malaria Survey Section with the assistance of some of the technical staff of the Malaria Research Unit.

A summary of the work performed by the Malaria Research Unit supported by funds from the American Jewish Joint Distribution Committee, is given in an Appendix.

Dr. I.J. Kligler who had been Controller of the Unit since its inception in 1922, vacated the post in April for that of the Chair of Hygiene at the Hebrew University though he remains associated with the Unit in an advisory capacity.

The work of the Malaria Survey Section provided by the International Health Division of the Rockefeller Foundation had been temporarily suspended owing to the transfers of the Controller and Engineer from Palestine. In September, however, the Foundation sent out an experienced malaria engineer to take charge of the Section and they have also undertaken the training in America of a local engineer who has been given some preliminary experience of malaria work in Palestine.

ANTIMALARIA STATISTICS FOR THE YEAR 1926.

Towns of Palestine.

Month.	No. of fresh possible breeding places discovered.				No. of Places.							No. of prosecutions.	No. of kilos of Solar oil used.	No. of Kilos of Crude oil used.
	Wells.	Cisterns.	Cesspits.	Other Places.	Inspected.	Breeding Anopheles.	Breeding Culex.	Breeding Anopheles and Culex.	Oiled.	Made mosquito-proof by sealing, covering or other means.	To which pumps fitted.			
January.	2	50	239	332	128152	55	635	-	51098	473	19	124	2574	137
February.	1	37	55	93	129552	38	527	-	56125	524	60	45	2500	190
March.	4	46	40	34	134528	24	562	-	53666	480	35	53	2586	174
April.	-	29	87	108	137076	29	1310	10	53849	2012	40	28	2805	177
May.	5	30	60	86	136165	31	1569	3	53777	424	57	2	3179	177
June.	11	26	27	111	137362	34	1467	5	52826	367	18	21	3293	190
July.	85	47	201	310	149334	34	1418	3	59730	745	32	56	3149	181
August.	42	55	208	383	141965	37	1860	10	54438	732	164	52	3145	106
September.	-	30	86	163	135124	28	1395	5	50139	899	36	17	2917	114
October.	6	10	109	63	145370	47	1135	9	53931	453	99	8	2919	133
November.	9	29	18	36	136384	26	781	3	49785	485	36	57	2351	85
December.	59	31	85	73	124135	12	499	-	44942	1027	99	10	2143	72
TOTALS.	224	420	1215	1792	1635147	395	13158	48	634306	8621	697	473	33561	1736

ANTI-MALARIA STATISTICS FOR THE YEAR 1926.

Villages of Palestine.

	No. of visits to villages.	No. of new wells and cisterns found.	No. of other new possible breeding places found.	No. of places in which mosquito larvae found.	No. of places oiled.	No. of places closed, repaired and made mosquito proof.	No. of persons treated with quinine.	No. of prosecutions.	No. of kilos of crude oil used.	No. of kilos of solar oil used.	Grammes of quinine expended.
January.	1202	153	145	519	18501	350	191	90	2	2293	1764
February.	1166	37	2	372	19359	346	122	176	2	1898	600
March.	1087	119	2	514	17192	475	66	48	2	1881	506
April.	1136	45	5	500	18364	528	92	100	-	2014	575
May.	1205	111	15	509	19126	323	55	235	6	2048	396
June.	1232	217	2	479	19292	416	79	29	-	2131	539
July.	1282	87	-	510	20170	467	91	29	-	2171	642
August.	1315	96	12	360	17754	528	108	38	-	1862	894
September.	1204	65	9	355	15645	484	90	189	-	1603	633
October.	1238	53	13	395	15866	513	86	157	-	1704	362
November.	1140	90	9	382	13887	682	117	179	-	1325	864
December.	1173	145	3	359	16820	155	150	86	-	1629	1226
TOTALS.	14370	1238	217	5254	211976	5267	1247	1406	12	22559	9081

(h) Rabies.

No deaths from hydrophobia occurred in 1926. There were 13 deaths in 1923, 9 in 1924, 3 in 1925. This satisfactory decrease in deaths must be attributed to the cooperative effort of the Departmentsof Agriculture, Police, and Municipal Authorities engaged in carrying out measures to cope with this disease, and the facilities afforded by this Department for early treatment with carbolised vaccine at eleven centres throughout the country.

965 persons reported for advice or treatment at anti-rabic centres compared with 1032 persons in 1925.

Statistics collected by the Department of Agriculture show that 16,532 animals were destroyed compared with 17,900 in 1925.

The number of definitely rabid animals recorded was 72 compared with 78 in 1925. Of these 61 were confirmed by laboratory examination.

III. MEDICAL SECTION.

(a) Government and Municipal Hospitals.

The system by which local hospital committees are responsible for the non-technical services and the Department of Health for the technical services at the Gaza, Nablus, Jaffa and Beersheba hospitals continued to work without undue difficulties. Negotiations for the formation of committees at Jerusalem and Haifa were not successful owing to the financial straits of the Municipalities of these two towns.

At Jaffa the Municipality built quarters for the male servants and a mortuary; and the Beersheba Municipality purchased and proposes to improve and extend, their previously rented hospital building. The Gaza Municipality prepared plans for the completion of the still unfinished hospital and for a proper drainage system.

With the exception of the Beersheba Hospital, all Government and Municipal Hospitals had to increase temporaily their bed strength during the summer months on account of the widespread typhoid epidemic. At Haifa, hospital admissions from July to the end of September had to be restricted to infectious cases and the bed strength during this time was increased from 25 to 76 beds. It is to the credit of the medical and nursing staff that among 105 typhoid patients treated during the summer, there was no mortality. Sick Government employees of the police, railways and other departments were treated at Government expense in the voluntary hospitals in Haifa during the period of the epidemic. At Jaffa 40 beds were set aside for typhoid patients but as most of the cases came from the neighbouring township of Tel Aviv and the Jewish colonies, the Hospital Committee and Jaffa Municipality felt strongly that different arrangements should be made in future years. At Gaza and Nablus the large number of typhoid patients to be fed and accommodated in the hospitals exhausted the funds of the Hospital Committees and Government assistance was necessary.

At the end of the year a valuable gift of an X-ray installation was made to the Jerusalem Hospital by Mr. Charles F. Loesch of Chicago, U.S.A. It is anticipated that the apparatus will prove of great use for the treatment of ringworm and scald-head among school children as well as for general hospital purposes.

The following are the numbers of patients admitted to the Government and Municipal Hospitals during the past seven years:-

Year.	1920	1921	1922	1923	1924	1925	1926
Patients.	5768	6602	6646	4905	4442	3939	4239

2 Royal Air Force personnel, 433 police, 255 railway employees, 269 other Government employees and 255 prisoners

received 11,124 days treatment in Government and Municipal Hospitals. In addition 771 prisoners suffering from minor or chronic ailments were treated in the Sick Detention Wards of the Central Prisons and 37 prisoners suffering from tuberculosis in the Tuberculosis Isolation Section of the Acre Central Prison.

(b) Government Dispensaries.

The Government Dispensaries have continued to provide general medical relief for the population in places where charitable institutions did not afford such facilities. The policy of developing the dispensaries for special work of public health importance has, however, never been lost sight of. Thus in 1923, the anti-rabic centres were established in them, in 1924 the special clinics for eye diseases and syphilis were put on a proper basis, in 1925, the first Infant Welfare Centres were started in them, while in 1926 special arrangements were made for the treatment on modern lines of ambulant cases of leprosy who for various reasons were not isolated in the Leper Home, and for the half yearly observation and examination of leper contacts. The dispensaries also serve as centres for vaccination against small pox and, during the typhoid epidemic, some of them were used as anti-typhoid inoculation centres; persons under quarantine surveillance report at them, recruits for the police and Frontier Force are medically examined in them and school children suffering from malaria, verminous conditions and eye disease which cannot be dealt with in the school ophthalmic clinics, are treated in them.

The number of new patients was 68,860 as compared with 64,486 in 1925. Dispensary attendances during the past seven years have been:-

ear.	1920	1921	1922	1923	1924	1925	1926
ttendances.	142,167	155,523	173,351	162,827	189,975	219,281	135,737

The figure for 1926 is exclusive of attendances at the Ophthalmic Clinics, which numbered more than 100,000.

305 village clinic sessions were conducted by the Medical Officers in some 19 villages. To some of the clinics, on account of shortage of staff, the Medical Officers' visits have been rather irregular and one or two of the clinics were given up. The most important new clinic started during the year was that at Auja el Hafir, a post in the Sinai desert about 55 kilometres south of Beersheba. The clinic is for the Bedouin population and it is intended to devote special attention to the investigation and treatment of syphilis which is endemic among the tribes of this area.

The number of attendances at the village clinics was 14,227 as compared with 14,930 in 1925 and 5919 in 1924. There were 4406 new patients of whom 118 were treated for malaria, 851 for eye diseases and 3437 for other conditions.

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(c) Voluntary Hospitals.

The total bed strength of the voluntary hospitals was 1580 as compared with 1607 the previous year. No new hospitals were opened but the Swedish Hospital, Bethlehem, was closed temporarily.

The Hadassah Medical Organization commenced the building of the Schweitzer Hospital of 30 beds for medical cases at Tiberias, and advanced the bulk of the money to the Tel Aviv Township for the building of a Tel Aviv Municipal Hospital of 125 beds, which it was proposed should be maintained by Hadassah when built. The Hadassah Medical Organization were also considering plans for building a tuberculosis sanatorium at Safad and, as a temporary measure, allotted part of the accommodation in their Safad Hospital for Tuberculosis patients.

Permission was refused to the Fathers of the Austrian Hospice, Nazareth, and to several private doctors, to open small hospitals because the proposed buildings and arrangements were unsuitable.

X-ray apparatus was installed in the Scottish Mission Hospital, Tiberias, and in the Bicur Cholim Hospital, Jerusalem. There are now some 11 X-ray sets at work in hospitals and clinics in Palestine.

Admissions to voluntary hospitals numbered 25,913 as compared with 26,369 in 1925 and 23,409 in 1924. Roughly 1 in every 10 of the Jewish population, 1 in every 25 of the Christian and 1 in every 100 of the Moslem population were admitted to one or other of the voluntary hospitals during the year.

During the typhoid epidemic in the summer, many of the voluntary hospitals devoted a proportion of their beds specially to the treatment of typhoid fever. The Kupat Cholim Hospital situated at Ain Harod in the centre of a number of Jewish colonies, extended its accommodation and allotted as many as 42 out of 54 beds to typhoid cases. This hospital although accommodated only in temporary wooden huts was well staffed and organised and did very valuable work in a bad epidemic centre. The Hadassah Hospital at Tel Aviv out of a total of 104 beds set aside about 45 for the treatment of typhoid and dysentery cases. In certain hospitals, however, the Department had to refuse to allow the treatment of typhoid patients owing to poor organization of the nursing and lack of proper facilities for reasonable isolation and disinfection. The typhoid epidemic showed that all voluntary hospitals are not used with the greatest economy and to the greatest advantage to the country and hospital boards should acquaint themselves with the particular needs of the areas which their hospitals serve.

Of the special hospitals mention must be made of Moravian Leper Hospital where treatment with E.C.C.O. and Chaulmoogra Oil has effected a great improvement among the patients generally and a few actual cures. The Ophthalmic Hospital of the Order of St. John in Jerusalem was attended by 18,127 new patients and gave a total of 87,883 consultations. These are record figures for the hospital. The Warden and Sub-Warden continued to train Medical Officers and nurses for the Government Ophthalmic Clinics and extended similar training to other doctors and to nurses from some of the Mission Hospitals.

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The dispensaries and out-patient clinics of the voluntary hospitals were attended by 310,169 new patients and gave 1,108,473 consultations as compared with 279,664 new patients and 959,624 consultations the previous year.

The work done by the village clinics is shown by the following figures:-

Organization.	No. of Clinics.	Total Attendances.	Total New Patients.
Hadassah Medical Organization.	25	156,833	25,393
Kupat Cholim.	40	196,638	66,469
Various Jewish Colony Committees.	13	53,859	17,639
Church Missionary Society.	2	5,727	2,472
Totals.	80	413,057	111,973

(d) Training of Nurses.

Examinations in nursing were held in April and October and were successfully completed by the following numbers of pupil nurses:-

	1st Year.	2nd Year.	3rd Year.
Government and Municipal Hospitals.	8	6	5
Hadassah, Rothschild Hospital.	25	20	11
Church Missionary Society's Hospitals.	6	1	2
Scottish Mission Hospital.	-	-	5
Edinburgh Medical Mission Hospital.	2	2	-
London Jews Society's Hospital.	3	1	2
St. Luke's Hospital.	1	2	-
	45	32	25

The subjects taken by pupil nurses in their examinations are as follows:-

1st year examination: Principles & Practice of Nursing; Elementary Anatomy, Physiology, Hygiene & Bacteriology.

2nd year examination: Principles & Practice of Nursing; Elementary Anatomy and Physiology; Infectious Diseases; Tropical Diseases.

3rd year examination: Principles & Practice of Nursing; Medicine, Surgery, Gynaecology and the Management of Infancy and Childhood.

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Written, practical and oral tests are given in the various subjects.

There were 15 hospitals recognised by Government as Nurses Training Schools and at the end of the year 117 nurses were undergoing training. Previously all pupil nurses have been Christian or Jewish, but during the year two Moslem girls entered the training school of the Watan Hospital at Nablus and it is anticipated that more will join this school where "harim" conditions have been arranged.

Since 1920, 127 nurses have been trained and obtained their certificates from hospitals in Palestine and have been registered by Government.

HOSPITAL NURSING STAFFS - 1926.

NAMES OF ORGANIZATIONS.	Bed Strength.	Matrons.	Trained Nurses.	Nurses under training.			Nurses not under training.	TOTALS.
				1st Year	2nd Year	3rd Year		
GOVERNMENT AND MUNICIPAL HOSPITALS.	271	7	19	12	10	6	19	73
VOLUNTARY HOSPITAL ORGANIZATIONS.								
Hadassah Medical Organization.	341	4	27	25	19	20	78	173
Church Missionary Society.	183	4	6	5	7	1	6	29
Kupat Cholim (Jewish Medical Organization).	12	-	3	1	-	-	-	4
Tutors and Protectors of the Jewish Community in the Holy Land, Amsterdam.	53	1	2	-	-	-	9	12
Mizgab Ladakh (Private Donation).	34	1	-	-	-	-	5	6
Bicur Cholim Society.	74	2	-	-	-	-	26	28
Italian Hospital, Jerusalem.	60	1	-	-	-	-	13	14
London Jews Society.	61	1	5	1	3	1	-	11
The Order of St. John of Jerusalem in England.	45	2	6	-	-	-	12	20
International Moravian Church, London.	30	1	4	-	-	-	-	5
German Deaconness Hospital, Jerusalem.	50	1	6	-	-	-	6	13
German Temple Society, Jaffa.	20	-	1	-	-	-	-	1
Jerusalem and the East Mission.	30	1	3	2	1	2	-	9
Italian Association, Haifa.	30	1	2	-	-	-	2	5
St. Charles Congregation, Haifa.	25	1	3	1	-	-	4	9
Edinburgh Medical Mission Society.	40	1	2	-	2	2	3	10
United Free Church of Scotland.	60	1	4	3	-	2	1	11
Ezrath Nashim Women's Society Home for Insane and Incurable.	50	-	-	-	-	-	-	16
French Hospitals.	360	5	24	-	-	-	15	44
TOTALS. Voluntary hospitals.	1558	28	98	38	32	28	196	420

GOVERNMENT AND MUNICIPAL HOSPITALS - 1926.

GENERAL AND INFECTIOUS.

Location of Hospital.		Bed strength.	Admissions.					Deaths.	Dis-charges.	Daily average in Hospital.
			Moslems.	Christians.	Jews.	Other Religions.	Total.			
Jerusalem.	Government.	80	550	259	109	1	919	64	856	40.0
Haifa.	Government.	25	317	130	361	8	816	18	800	30.5
Acre.	Municipal.	15	293	125	23	17	458	36	429	14.7
Nablus.	Watan.	25	694	49	8	1	752	61	697	29.6
Jaffa.	Municipal.	40	433	59	290	-	782	52	734	27.5
Gaza.	Municipal.	18	362	11	4	-	377	16	356	12.1
Beersheba.	Municipal.	8	166	11	8	-	185	2	182	4.8
Totals.		211	2815	644	803	27	4289	249	4054	22.74

PRISON SICK DETENTION WARDS.

Location of Hospital.	Bed strength.	Moslems.	Christians.	Jews.	Other Religions.	Total.	Deaths.	Dis-charges.	Daily average in Hospital.
Jerusalem.	12	165	24	25	-	214	-	215	6.3
Acre.	12	508	33	13	3	557	-	545	18.0
Totals.	24	673	57	38	3	771	-	760	12.15

GOVERNMENT DISPENSARIES AND CLINICS EXCLUSIVE OF OPHTHALMIC & OTHER SPECIAL CLINICS - 1926.

Location.	Total Number of Attendances.	New Cases.								
		Total new cases.	By Diseases.			By Religions.				
			Malaria.	Eye Diseases.	Other Diseases.	Moslems.	Christians.	Jews.	Other Religions.
Jerusalem Dispensary.	14255	10951	14	155	10782	6930	2740	1281	-
Ramallah "	457	381	4	40	337	262	118	1	-
Hebron "	7632	5807	176	317	5314	5563	193	51	-
Beersheba "	15990	4430	-	712	3718	4212	194	24	-
Jaffa "	12455	4959	93	550	4316	4645	147	167	-
Ramleh. "	14509	6228	23	139	6066	4972	1168	88	-
Gaza "	3947	3416	7	-	3409	3048	365	3	-
Majdal "	4588	3142	26	579	2537	3023	104	15	-
Haifa "	11255	7208	490	430	6288	3343	2086	1774	-
Acre "	4579	3512	412	15	3085	2316	867	217	112
Tulkarem "	15096	5184	1	-	5183	5022	162	-	-
Nablus "	15950	2841	11	-	2830	2665	112	11	53
Jenin "	3298	2949	120	383	2446	2814	133	2	-
Beisan "	5257	4662	436	668	3558	4149	410	103	-
Kantara Railway Medical Inspection Room.	4505	1659	4	200	1455	1046	613	-	-
Nazareth Medical Inspection Room.	715	467	6	5	456	196	248	23	-
Tiberias " " "	542	430	46	10	374	260	91	75	4
Safad " " "	561	491	8	26	457	390	67	34	-
Bethlehem " " "	146	143	-	3	140	68	75	-	-
TOTALS.	135737	68860	1877	4232	62751	54929	9893	3869	169

VOLUNTARY HOSPITALS - 1926.

Name and Location of Hospital.	Bed Strength.	Admissions.					Deaths.	Discharges.	Daily average in Hospital.	
		Moslems.	Christians.	Jews.	Other Religions	Totals				
JERUSALEM.										
Ophthalmic Hospital of the Order of St. John of Jerusalem.	45	1269	209	20	-	1498	-	1489	39.1	
St. Louis (French) Hospital.	150	437	625	13	-	1075	32	1038	38.0	
Italian Hospital.	60	271	132	8	-	411	20	393	17.3	
Rothschild (Hadassah) Hospital.	121	11	6	2980	-	2997	153	2836	119.6	
English Mission Hospital (London Jews Society).	61	25	66	1171	-	1262	10	1259	47.8	Closed from 13-9-26 to 5-10-26.
Shaare Zedek Hospital.	53	8	1	1000	1	1010	79	932	46.3	
Mizgab Ladach Hospital.	34	-	5	626	-	631	29	618	22.5	
Bicur Cholim Hospital.	74	4	2	1165	-	1171	76	1056	67.8	
Leper Hospital (International Moravian Society).	30	5	-	2	-	7	3	7	24.4	
Deaconess (German) Hospital.	50	284	490	93	-	867	32	813	32.1	
Convalescent Home, Motza.	30	-	-	390	-	390	-	417	31.4	Closed from 30-10-26 to 31-12-26.
BETHLEHEM.										
French Hospital.	70	244	629	-	-	873	13	865	30.5	
HEBRON.										
Church Missionary Society Hospital.	18	219	-	-	-	219	8	208	8.0	Closed 1-7-26 to 31-8-26.
JAFFA.										
Hadassah Hospital.	104	-	-	3816	-	3816	203	3609	119.1	
Church Missionary Society Hospital.	57	-	-	-	-	658	6	649	21.1	Closed during April and August.
French Hospital.	90	872	137	63	-	1072	44	1030	34.1	
German Hospital.	20	4	71	1	-	76	4	73	2.7	

VOLUNTARY HOSPITALS - 1926 (continued).

Name and Location of Hospital.	Bed Strength.	Admissions.					Deaths.	Dis-charges.	Daily average in Hospital.	Remarks.
		Moslems.	Christians.	Jews.	Other Religions	Totals				
GAZA.										
Church Missionary Society Hospital.	63	-	-	-	-	300	3	297	18.0	
HAIFA.										
St. Luke's (Jerusalem and the East Mission) Hospital.	30	331	206	80	10	627	28	601	17.7	
Hadassah Hospital.	52	16	7	2058	-	2081	62	2014	53.6	
Italian Surgical Hospital.	30	117	83	50	-	250	4	240	15.4	Closed during June & July
German Hospital.	25	107	212	421	3	743	18	741	22.4	
NABLUS.										
Church Missionary Society Hospital.	45	547	73	-	-	620	20	588	16.8	
NAZARETH.										
Edinburgh Medical Mission Hospital.	40	570	258	-	-	828	34	783	29.3	Closed August & Sept.
French (Soeurs de Charité) Hospital.	50	224	195	1	-	420	18	395	9.9	
TIBERIAS.										
United Free Church of Scotland Hosp.	60	-	-	-	-	720	30	706	39.6	Closed July, Aug. & Sept.
Kupat Cholim Hospital.	12	-	-	232	1	233	2	246	11.8	
SAFAD.										
Hadassah Hospital.	64	112	20	926	-	1058	51	989	54.6	
AIN HAROD.										
Kupat Cholim Hospital.	42									No figures available.
Totals.	1580	5677	3427	15116	15	25913	982	24892	35.4	

VOLUNTARY DISPENSARIES & CLINICS - 1926.

Name of Dispensary or Clinic.	Total attendances.	Number of new Patients.								Remarks.
		Totals	By Diseases.			By Religions.				
			Malaria.	Eye Diseases	Other Diseases	Moslems.	Christians.	Jews.	Other Religions	
JERUSALEM.										
Ophthalmic Hospital of the Order of St. John of Jerusalem.	87467	18083	-	18083	-	11668	3549	2866	-	
St. Louis (French) Hospital.	31872	15115	87	2910	12118	7975	5835	1305	-	
Italian Hospital.	5489	2534	35	16	2483	1413	650	471	-	
Hadassah (Rothschild) Hospital.	127058	25230	241	4011	20978	305	215	24710	-	
English Mission Hospital (London Jews Society).	28493	13277	4	1724	11549	273	713	12291	-	
Shaare Zedek Hospital.	19343	14570	-	-	14570	413	136	14021	-	
Mizgab Ladach Hospital.	10162	6335	-	301	6034	213	32	6090	-	
Old Bicur Cholim Hospital.	3269	2650	-	-	2650	-	-	2650	-	
New Bicur Cholim Hospital.	17009	6501	1	-	6500	-	-	6501	-	
Deaconess (German) Hospital.	9073	3845	-	189	3656	1439	862	1544	-	
Armenian Convent Dispensary.	2474	666	15	25	626	-	666	-	-	
Kupat Cholim Dispensary.	26629	10590	1	-	10589	-	-	10590	-	
Moslem Polyclinic.	810	449	6	19	424	449	-	-	-	
Ezrath Nashim Nervous Diseases.	437	131	-	-	131	-	-	131	-	Opened July, 1926.
RAMALLAH.										
Soeurs de St. Joseph.	919	818	7	339	472	423	395	-	-	
BETHLEHEM.										
French Hospital.	19818	6071	-	2448	3623	2492	3579	-	-	
HEBRON.										
Church Missionary Society Hospital.	15836	4701	-	1558	3143	4663	19	19	-	Closed July August.
Hadassah Dispensary.	7093	2272	-	704	1568	1392	-	880	-	

VOLUNTARY DISPENSARIES & CLINICS - 1926 (Continued).

Name of Dispensary or Clinic.	Total attendances.	Number of New Patients.								Remarks.
		Totals	By Diseases.			By Religions.				
			Malaria.	Eye Diseases	Other Diseases	Moslems.	Christians.	Jews.	Other Religions	
JAFFA.										
Church Missionary Society Hospital.	14037	6835	84	1044	5707	-	-	-	-	Closed August.
Hadassah Hospital.	89831	19776	161	3675	15940	18	2	19756	-	
French Hospital.	23555	1993	2	789	1202	1993	-	-	-	
Kupat Cholim Dispensary.	170418	47973	264	7276	40433	574	-	47399	-	
St. Georges' Dispensary.	1746	1456	51	111	1294	162	1294	-	-	
Jewish Medical Organization Neve Zedek Dispensary.	26123	6030	2	679	5349	-	-	6030	-	
" " Neve Shalom "	10668	1469	-	505	964	8	-	1461	-	
Agoudat Israel Dispensary.	21869	5367	266	1754	3347	769	-	4598	-	
GAZA.										
Church Missionary Society Hospital.	3793	2141	81	256	1804	1922	218	1	-	Closed April.
Hadassah Dispensary.	3357	1360	1	88	1271	901	298	161	-	Closed Nov. & Dec.
HAIFA.										
St. Luke's (Jerusalem and the East) Hospital.	2510	1450	170	95	1185	551	695	121	83	
Hadassah Hospital.	59485	15263	115	5877	9271	462	228	14573	-	
Italian Hospital.	5101	1783	215	15	1553	761	454	530	38	Closed June and July.
German Hospital.	4413	3951	13	1709	2229	1530	1664	737	20	
British Mission to the Jews Disp.	5242	1677	98	115	1464	219	162	1295	1	Closed August & September.
Kupat Cholim Dispensary.	53191	15326	277	-	15049	-	-	15326	-	
Soeurs de Charité Dispensary.	15055	3431	1002	703	1726	2026	1336	69	-	

VOLUNTARY DISPENSARIES & CLINICS - 1926 (Continued).

Name of Dispensary or Clinic.	Total attendances.	Number of new Patients.								Remarks.
		Totals	By Diseases.			By Religions.				
			Malaria.	Eye Diseases	Other Diseases	Moslems.	Christians.	Jews.	Other Religions	
NABLUS.										
Church Missionary Society Hospital.	8473	2437	86	140	2211	-	-	-	-	
NAZARETH.										
Edinburgh Medical Mission Hospital.	4836	3253	221	831	2201	1841	1412	-	-	Closed Sept.
French Hospital.	5351	4133	342	608	3183	2615	1518	-	-	
TIBERIAS.										
Scottish Mission Hospital.	8881	2063	175	96	1792	-	2063	-	-	
Hadassah Dispensary.	95683	16191	1079	4526	10586	2297	283	13611	-	
Kupat Cholim Dispensary.	5638	1554	38	32	1484	-	-	1554	-	
SAFAD.										
Hadassah Dispensary.	46240	3606	49	751	2806	608	50	2948	-	
BEISAN.										
Hadassah Dispensary.	9726	5813	890	1385	3538	4208	885	720	-	
T O T A L S.	1108473	310169	6079	65387	238703	56583	29213	214959	142	

(e) Maternity and Child Welfare.

Palestine was represented at the Fourth English speaking Conference on Maternity and Child Welfare held in London in July by the Matron of the Princess Mary Maternity Wards.

Towards the end of the year two Superintendents of Midwives were appointed, one for Jerusalem and the other for Nablus. Their duties are to train pupil midwives and to supervise maternity and develop infant welfare work in their areas.

The Superintendent for Jerusalem was placed in charge of the Princess Mary Wards and the Midwives Training School and the staff was increased in anticipation of an expansion of the work. An ante-natal clinic was started and showed promising signs of development.

At Nablus both the maternity and infant welfare work has to be developed from the beginning and the post of Superintendent is one that requires previous experience in this work and a knowledge of Arabic. The Watan Hospital Committee collected funds and prepared plans for the building of Maternity Wards (12 beds) which will form an annex to the Nablus Hospital, and an Infant Welfare Centre was started with a Palestinian Nurse to do the home visiting, but progress is necessarily slow.

The work of the Princess Mary Maternity Wards again increased. The numbers of babies born in the Wards during the past five years have been:-

1922	1923	1924	1925	1926
55	111	170	196	267

and the numbers of women trained as midwives have been:-

1922	1923	1924	1925	1926
3	11	9	15	15

In addition to the women trained in the Government School, 8 nurses of the Hadassah Medical Organization completed the course and examination of that organization and were granted licences to practise midwifery while 16 midwives with foreign qualifications were licensed.

The infantile mortality rate per 1000 births was 163.15 as compared with 188.64 in 1925.

As in previous years, the work carried out by the Hadassah Infant Welfare Centres was more extensive and highly developed than that of other centres. At the end of the year there were 13 Centres in existence at which 13,527 children were cared for. 31,634 consultations took place at the clinics and 22,935 visits were made to the homes of infants by the nurses. The Hadassah opened two new Ante-natal Centres in Tel Aviv with the intention that they should eventually serve also for infant welfare work. The two centres conducted by the Women's International Zionist Organization, also in

Tel Aviv, increased their work considerably and a third Centre was opened in the Keren Hatemanim quarter of the town.

Among the Arab communities, the opening of new Centres by local committees at Haifa, Ramleh, Jaffa, Nablus and Bethlehem, the expansion of the work of the Ramallah Centre and the preparations to start centres at Gaza and Hebron, were very satisfactory. The rapid development of the work of the new centres at Ramleh and Haifa was particularly notable.

(f) Ophthalmic Service.

The occasion is suitable for reviewing the ophthalmic work and policy of the Department of Health during the past eight years.

The high percentage of trachoma throughout Palestine and the frequency of acute conjunctivitis, often in epidemic form, necessitate public health measures for the treatment of these conditions and for the prevention and treatment of their complications and sequelae which, if neglected, are the usual causes of blindness and ophthalmic disablement.

The measures for the prevention and early treatment of trachoma and conjunctivitis among some 60,000 school children are described in the Section of the Annual Reports on the School Medical Service. The work was started as a general measure in 1920 and has been definitely successful throughout the country, both in towns and villages. Its success has depended and must continue to depend, more on the continuous application of standardised simple routine measures than on highly skilled supervision and treatment. Supervision of the school ophthalmic work is, however, necessary and in those places where it has been carefully and conscientiously given by a Medical Officer who has had proper ophthalmic training and experience, the results have more than justified the attention bestowed.

The Department has also undertaken to provide systematically facilities in areas where they were not available, for the skilled treatment of persons requiring ophthalmic relief. From 1919 to 1923, these facilities were provided by means of the Travelling Ophthalmic Hospital which selected as its centres of operation the larger villages and occasionally one of the smaller towns where ophthalmic conditions were known to be bad.

In 1924, after the Travelling Ophthalmic Hospital had been closed, a number of Government Ophthalmic Clinics were established in various parts of the country. The scheme was started with the financial assistance of the British Order of St. John in Jerusalem and with the technical advice and under the expert supervision of the Warden of the Order's Ophthalmic Hospital in Jerusalem. Government Medical Officers after a careful training at the St. John Ophthalmic Hospital in the treatment of the common eye diseases of the country were put in part-time charge of the clinics. They have other public health duties to perform and can give only two or three mornings each week to the clinic work. The Order provided six nurses who, after a course of four months ophthalmic training in the Ophthalmic Hospital in Jerusalem, were posted to the clinics and also carry out the ophthalmic work in the neighbouring schools. The clinics are visited from time to time by the Warden or surgeons of the St. John Ophthalmic hospital and during 1926 each clinic received at least two such visits.

While there were certain initial difficulties and delays in getting the scheme properly organized, it has during the past year proved successful to an unexpected degree.

Thanks to the careful training given them in Jerusalem, to the occasional visits of the Warden and surgeons of the Order of St. John and to the "refresher" courses they receive, the medical officers and nurses have with few exceptions taken considerable interest and became very proficient in their work.

The medical officers are not considered to be specialist ophthalmic surgeons but they are trained to carry out minor ophthalmic surgery and can treat the bulk of the cases which attend the clinics. They refer difficult cases to the St. John Ophthalmic Hospital where most of the intra-ocular operations are performed. Thus the Government has now in its service a trained ophthalmic personnel.

The clinics have been established in the Government Dispensary buildings at Gaza, Ramleh, Beersheba, Nablus, Tulkarem and Acre. The following table shows in some detail the work each clinic has performed during 1926. There were nearly 14,000 new patients, more than 100,000 consultations given and 2500 operations performed. In one year the clinics have done almost as much work as it was possible for the Travelling Hospital to accomplish in four. The cost of their maintenance is very slight as compared with that of the Travelling Hospital, they have not to close during the winter when weather conditions prevent a tent hospital from working and the prolonged treatment required by many patients is not interrupted by the move of the hospital to another district. The clinics were of very great value during the epidemic of acute conjunctivitis which occurred during the summer and autumn months, and their association with the St. John Ophthalmic Hospital in Jerusalem has been most useful.

Future policy lies in the direction of an increase in the number of the clinics and in the provision of special arrangements for dealing with epidemics of acute conjunctivitis.

GOVERNMENT OPHTHALMIC CLINICS - 1926.

	Total Attendances.	No. of new patients.	No. admitted to Hospital.	Trichiasis.	Other conditions.	Clear Lids.	Acute Conjunctivitis	Acute Conjunctivitis with corneal ulceration.	Trachoma.	Trachoma with corneal complications.	Corneal ulcers other than above.	Corneal conditions other than ulcers.	Endophthalmia.	Varia.	Blind in both eyes.	Blind in one eye.
Gaza.	12721	1467	48	143	408	217	782	22	1248	133	22	591	177	410	14	113
Ramleh.	25213	3081	7	196	53	479	1718	126	2602	964	11	911	142	817	95	213
Nablus.	31072	3319	17	45	367	671	1508	141	2499	160	166	413	92	856	14	57
Tulkarem.	18610	3652	-	452	760	281	1223	60	3362	1093	67	213	429	1521	64	228
Acre.	12825	1234	15	10	11	131	471	19	590	169	9	37	45	258	7	40
Beersheba.	5021	1057	47	109	30	115	168	66	902	147	23	148	22	455	17	32
TOTALS.	105462	13810	134	955	1629	1894	5870	434	11183	2666	298	2313	907	4317	231	683

(g) Lunacy.

There has been a pressing demand for additional mental hospital accommodation for Jewish lunatics. In proportion to their numbers, the Jewish community require from ten to twelve times as much hospital accommodation for their insane as the Arab population. A large proportion of the Jewish patients were recently arrived immigrants and the determination of the mental condition of immigrants before they leave their countries of origin is becoming more and more necessary.

A scheme was put on foot by certain Jewish bodies for building a modern mental hospital at Tel-Aviv but unfortunately was abandoned owing to the difficulty of raising funds.

The Ezrath Nashim home for Insane and Incurables has continued to deal with most of the Jewish cases. Neither the buildings nor the organization of the institution fit it for use as a modern mental hospital. It could accommodate comfortably 40 quiet chronic patients requiring only occasional medical supervision. In July it contained 76 patients (26 men and 50 women) and the overcrowding in the women's wards was very bad - the beds were actually touching one another. There was, further, a considerable list of bad cases awaiting admission to the institution. Only the absolute necessity of preventing violent patients from being at large could justify such conditions.

In spite of urgently asked for extensions to the Government Mental Hospital at Bethlehem, no additional buildings were provided (but it was possible by overcrowding the wards to put up another ten beds for female patients) and although a scheme had received approval for the provision in each of the district hospitals of one or two cells for dangerous lunatics awaiting admission to the Mental Hospital, the scheme had not anywhere been put into effect by the end of the year and dangerous cases continued to be kept in the prisons and police lock-ups.

The original arrangement by which Jewish lunatics were to be treated in the Ezrath Nashim Home and other patients in the Government Mental Hospital, could not be maintained and about one third of the patients under treatment at Bethlehem were Jewish cases.

At the Government Hospital all suitable male and female patients were well employed in outdoor occupations. There were two escapes from the hospital, but each fugitive was soon recovered, and two serious accidents from falls - one resulting in the loss of an eye and the other in a fractured femur. Two deaths occurred, one from broncho-pneumonia and the other from heart disease.

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The classification of patients treated in the two institutions is as follows:-

	Govt. Mental Hospital.			Ezrath Nashim Asylum.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
cute Confusional Insanity.	2	1	3	-	-	-
rganic Insanity.	1	-	1	1	2	3
eneral Paralysis.	1	-	1	1	-	1
iabetic Insanity.	1	-	1	-	-	-
ellagrous Insanity.	-	1	1	-	-	-
cute Mania.	1	3	4	-	-	-
ementia Praecox.	9	6	15	13	14	27
ementia Senilis.	-	1	1	1	1	2
eurasthenia.	1	-	1	-	-	-
ysteria.	-	3	3	-	-	-
pilepsy and Epileptic Insanity.	2	-	2	2	1	3
elancholia.	3	1	4	-	4	4
mbecility.	1	-	1	-	2	2
ania.	-	-	-	5	6	11
aranoia.	-	-	-	1	2	3
uerperal Insanity.	-	-	-	-	1	1
ther forms of Insanity.	2	-	2	-	-	-
	24	16	40	24	33	57

Hospital.	Bed Strength.	Admissions.				Deaths	Discharges	Daily average in Hospital.
		Moslems.	Christians.	Jews.	Total.			
Government Mental Hospital.	60	14	7	19	40	2	26	44.9
Ezrath Nashim Asylum.	50	-	-	57	57	6	45	71.7

(h) School Medical Service.

The number of school children has increased steadily year by year from 45,376 in 1922 to 64,808 in 1926. The following table, compiled from figures supplied by the Department of Education, shows their distribution between Government and non-Government schools.

	No. of Schools.	No. of Boys.	No. of Girls.	No. of Teachers.
Government Schools in towns.	49	4829	2801	344
Government schools in villages.	265	11351	756	343
Non-Government Schools.	483	24851	20220	2151
Totals.	797	41031	23777	2838

10 new schools were started during the year and the procedure whereby no new school might be opened until the buildings had been inspected by the Medical Officer of Health and the sanitary conditions laid down by him had been complied with, continued to prove of great value in maintaining a proper standard of sanitation and hygiene in school buildings. Numerous medical inspections of old school buildings were made and measures for improving or remedying sanitary defects were laid down and had to be carried out before the schools became eligible for the annual grant-in-aid from Government. Thus in Jerusalem alone, 85 school buildings were inspected and in each case the inspection was followed by an improvement in hygienic conditions. This system has brought about much more rapid progress in non-Government than in Government Schools. Overcrowding of class rooms is still the most noticeable defect. A large number of villages followed more or less the Government standard plan for village schools, in reconstructing or building their schools.

The following table summarizes the school work performed by Government Medical Officers and nurses during the year.

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	Town Schools.	Village Schools.	Total.
Lectures to Teachers.			
No. of Hygiene Lectures by M.Os to teachers.	31	98	129
No. of teachers attending lectures.	415	280	695
Medical Inspection of Pupils.			
No. of children medically examined.	3769	3252	7021
" " " with trachoma.	1850	2506	4356
" " " " other eye diseases	395	268	663
" " " " defective vision.	58	119	177
" " " " 4 or more teeth badly decayed.	47	48	95
" " " " enlarged spleen.	49	310	359
" " " " heart disease.	8	5	13
" " " " lung affections.	12	4	16
" " " " tuberculous disease	1	6	7
" " " mentally defective.	2	2	4
" " vaccinations performed.	1797	662	2459
" " re-vaccinations performed.	10658	9974	20632
" " children treated for malaria.	262	451	713
Ophthalmic Treatment.			
. of attendances for treatment for trachoma.	513,324	603,756	1,117,080

Special importance continues to be attached to the ophthalmic work carried out in the schools because trachoma is the commonest disease from which the children suffer. 62% of the children medically examined showed signs of trachoma as compared with 69% the previous year, and there were more than 1,100,000 attendances at the school clinics for ophthalmic treatment.

About 23,000 school children were vaccinated most of them during the spring months, while during the summer & autumn a vigorous inoculation campaign with typhoid vaccine was carried out.

The Hadassah Medical Organization undertook the school medical work in the majority of the Jewish schools. They took over the supervision of some 30 new schools during the year and an increase of personnel was consequently necessary. Nurses were specially trained for school work in Jerusalem, Tel Aviv, Rehovoth, Tiberias and some of the Jewish Colonies. Their doctors performed the Von Pirquet reaction on a number of children between the ages of 3 and 10 years and cases giving a positive result were kept under special observation and periodically weighed. In certain areas, particularly among the Yemenite Jews, as many as 20% of the children gave a positive reaction. In Jerusalem the Hadassah physicians were able to treat ring worm and favus with X-rays and obtained very good results. Much attention continued to be given to the treatment of trachoma. The Hadassah made a start with the medical examination of school teachers in the Jewish schools, particularly of their hearts, lungs and throats, and about 120 kindergarten teachers were given special instruction in hygiene.

Infectious diseases notably whooping cough, scarlet fever, diphtheria or typhoid fever were prevalent during the year but no school had to be closed on account of infectious disease.

(i) Railway Medical Service.

The general health of railway employees has been good throughout the year and it was possible to make a further slight reduction in the small staff of trained medical orderlies supplied by the Department of Health for sanitary supervision and first aid work on the railways.

Admissions of railway personnel to hospital numbered 255 as compared with 268 in 1925 and 266 in 1924. The average length of treatment of cases admitted to Hospital was 8.1 days.

Dispensary attendances were 12,541 as compared with 11,361 and 10,029 in the years 1925 and 1924 respectively. The growth in the number of dispensary attendances is unnecessary and efforts are being made to check it.

There were no large railway accidents during the year which necessitated the use of the hospital coach but much careful attention was given to the maintenance of First Aid Equipment at the stations and in the brake-vans, in proper and serviceable condition.

(j) Gendarmerie, Frontier Force & Police Medical Services.

Both British and Palestinian Sections of the Palestine Gendarmerie were disbanded in April.

A British Section of the Palestine Police Force was formed into which a number of British Gendarmes were absorbed.

A Transjordan Frontier Force was formed into which were drafted a number of men from both the Palestine Gendarmerie and the Transjordan Arab Legion.

The Gendarmerie Posts at Metulla, Rosh Pinna, Samakh, Jericho and Beersheba have been maintained as Police Posts.

These changes involved a complete reorganization of the medical services. The medical and sanitary care of the Palestine Gendarmerie had been carried out by the Royal Air Force Medical Service in the Sarafand Cantonment Area where the bulk of the Force was stationed and by the Department of Health at out-stations, and the Royal Air Force had been responsible for the medical arrangements during all active operations.

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The Transjordan Frontier Force has its own medical service, for the formation, organization and supervision of which the Palestine Department of Health has been responsible.

The Force is a mobile force and between April and the end of the year operated from six different stations in Palestine and Transjordan.

Its medical personnel consists of one Senior Medical Officer, two Medical Officers and 14 N.C.Os and medical orderlies. The Senior Medical Officer - seconded from the R.A.M.C. - was not available for duty until September.

Hospitalization has been carried out in three Detention Hospitals, each of 6 beds, from which serious cases have been evacuated to the Palestine Government and Municipal Hospitals at Jaffa, Jerusalem and Haifa, and the Transjordan Government Hospital at Amman. The Force has one Ford motor ambulance. Of the Detention Hospitals one was at Sarafand and was well housed in a converted army hut and took the majority of the sick cases; another was established in the Transjordan Quarantine building at Maan in September and was under the charge of an experienced part-time Medical Officer, and the third was a tent hospital at Shunet Nemrin in the Jordan Valley.

In September mobile medical equipment was supplied by the Department of Health to a part of the Force undertaking active operations at el Remte near the northern boundary of Transjordan, and in December the Department loaned a motor ambulance for the evacuation of casualties from Samakh, where a Company was stationed, to Tiberias.

The medical care of the Palestine Police in the towns and small outposts has offered no difficulties in the past. Recruits had been examined by the District Medical Boards before acceptance. First Aid equipment had been supplied and maintained in Police Stations and Barracks, hospital and dispensary treatment had been provided by Government and Municipal and occasionally by voluntary hospitals. With the formation of a British Section and the establishment of fairly large camps of Palestinian mounted police at isolated places such as Rosh Pina, Metulla and Samakh, more elaborate arrangements became necessary. The barrack accommodation for the detachments of British police at Jerusalem, Sarafand, Haifa and Nablus was carefully inspected and proper sanitary arrangements made. Medical Orderlies were trained and detailed to each of the British police posts and to the Palestinian police posts at Metulla, Rosh Pinna, Samakh and Jericho. Each medical orderly was provided with a Medical Box containing complete equipment for the treatment of minor ailments and injuries, and the officer in charge of each post was supplied with an army pattern Medical Companion and Surgical Haversack for emergency use. Arrangements were made for the nearest private medical practitioners to visit the isolated posts in cases of urgency or emergency, and for special wards to be set aside for the treatment of British police in the Government and Municipal Hospitals of Jerusalem, Jaffa, Haifa and Nablus. On account of the usually excellent condition of their teeth it has not been necessary for the Government to provide dental treatment for the Palestinian police, but the bad condition of the teeth of the men recruited in England has necessitated provision by the Government of free dental treatment for the British police. The treatment is carried out by private dental surgeons according to a fixed scale of charges. During the last 5 months of the year, 68 men were treated at a cost of £.114.

(k) Prison Medical Service

Structural alterations to improve the ventilation and lighting of the Central Prisons at Acre and Jerusalem, have continued but much work remains to be done before the prison buildings will meet even the moderate requirements laid down by the Prisons Commission in 1923.

A number of new lock-ups have been built and several old ones very greatly improved, and the proposal of the Prisons Commission that the Egyptian system of extra-mural labour should be adopted in Palestine, was under consideration. Under this system short-term prisoners are allowed the option of going to prison or of living at home and reporting daily for a certain number of hours work in the open-air. If adopted, the system should reduce materially overcrowding in the lock-ups.

Careful attention continued to be paid to the prisoners' dietary - not only to the quantity and quality of the food supplied by the contractors, but also to the methods and variety of cooking the meals; and the Prison Medical Officers supervised the amount of open-air exercise and occupation given to prisoners.

The health of the prisoners particularly in the Jail Labour Camps has been generally satisfactory.

The prisoners and staff of Jail Labour Camp No.2, employed on road construction between Haifa and Acre, were camped in a very malarious place near the Kishon, and consequently suffered heavily from malaria. The British Officer in charge of the camp died of a malignant infection, in August.

The tuberculosis rate in the Central Prisons showed for the first time a drop which may, with some confidence, be attributed tothe very great improvements which have been effected since 1923 in the conditions of prison life and buildings. The number of new cases occurring during the year was 7. The number of deaths from tuberculosis was 4 as compared with 19 in 1925. 37 cases were under treatment in the Acre Prison Tuberculosis Isolation Section as compared with 53 in 1925. In addition to the 4 deaths in the Tuberculosis Isolation Section, 2 patients were released on account of their disease, 8 were discharged on completion of sentence and 12 were returned to prison with the disease apparently arrested.

(l) Training in "First Aid".

Courses of instruction in "First Aid to the Injured" were given at the Headquarters, Department of Health and at the Police Training School by Government Medical Officers.

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For the first time, a number of candidates already in possession of the Certificate took the examination for the Voucher of the St. John Ambulance Association. The examination results were as follows:-

	No. of candidates.	For Certificate		For Voucher.	
		Passed	Failed	Passed	Failed.
Palestine Department of Health.	14	10	1	2	1
Transjordan Frontier Force Medical Orderlies.	7	4	-	2	1
Transjordan Department of Health.	2	2	-		
Palestine Police.	21	12	9		
TOTALS.	44	28	10	4	2

(m) The Medical Commission.

The Central Medical Board carried out 53 examinations of which 26 were to determine the fitness of officers for Government service, 4 to invalid officers from the service, 12 to recommend sick leave abroad, 3 to recommend sick leave in Palestine, 7 to determine the mental condition of prisoners and 1 to assess disability for compensation.

The 18 District Medical Boards carried out 3053 examinations, the majority of which were to determine the fitness for service of police recruits. 40.3% of police recruits were found to be physically unfit for service as compared with 45% the previous year.

(n) Medico-Legal Examinations.

The necessity for the appointment of coroners in Palestine had for several years been apparent and a Coroners' Ordinance was therefore prepared on the usual colonial model and was published on 1st August in the Official Gazette as the "Coroners' Ordinance, 1926."

It tends to add to the already excessive amount of medico-legal work which the Medical Officers of Health are called upon to perform.

The numbers of medico-legal examinations carried out during the past four years have been as follows:-

1923	1924	1925	1926
9234	8202	5450	5021

Government Medical Officers gave evidence in the Courts on 418 occasions and performed 262 post mortem examinations at the request of the police and coroners.

Thanks to the courtesy of the Egyptian Government and to the kindness of Dr. Sydney Smith, their Principal Medico-legal Expert, a Palestinian Medical Officer was given a very thorough and practical course of training in Medico-Legal work in Cairo.

(o) The Practice of Medicine, Pharmacy, Dentistry & Midwifery.

At the end of 1926 there were 622 doctors, 182 pharmacists, 201 dentists and 217 midwives licensed to practise their professions in Palestine.

The increase during the year in the number of licensed doctors was only 35 as compared with an increase of 106 in 1925, 94 in 1924 and 43 in 1923. The increase of 35 was probably offset to a large extent by the numbers of doctors who left Palestine during the year but of whom accurate records are not yet available. The economic conditions for medical practice were worse than in any previous year. An encouraging feature during 1926 has been the number of useful scientific meetings held by medical societies and organizations of which the Academy of Medicine in Jerusalem is a leading example.

13 new pharmacies, of which 7 were in Tel Aviv, were opened and one pharmacy was closed. At the end of the year there were 90 licensed pharmacies in the various towns of Palestine. All new pharmacies have complied with the regulations regarding the pharmacy building, water supply and drainage, fittings and bottles and a very satisfactory standard has resulted.

The Inspector of Pharmacies and Medical Officers of the Department carried out regular inspections of pharmacies, dispensaries and clinics. Numerous samples of drugs and medicines were taken from pharmacies for analysis and all consignments of drugs arriving in the Customs Houses were inspected and analysis made when thought necessary.

An Ordinance was under preparation to authorize pharmacy assistants who have completed a course of three years practical training and have successfully passed an examination, to dispense during the temporary absence of the pharmacy, particularly during meal hours and at night.

A Notice under the Customs Duties Exemption Ordinance 1924, was published in the Official Gazette of 1-6-26 exempting from Customs duty drugs, disinfectants, dental, surgical and medical appliances and apparatus; optical appliances and surgical and dental dressings.

After persistent effort for several years, it has at last been made possible for Russian doctors, pharmacists and dentists in Palestine to communicate through the Soviet Consulate General in London, with their universities and so to obtain proof of qualification which is necessary to enable them to receive permanent licences to practise their respective professions in Palestine.

The Dentists Ordinance 1926, was issued on 16th September. It supersedes the previously existing but inadequate Ottoman laws and the clauses in Public Health Ordinance No.1 of May 1918, with regard to the practice of dentistry in Palestine. It limits the grant of licences to persons who have studied dentistry for a period of at least three academic years in a recognized dental or medical school and who have obtained a recognised diploma in dentistry, but it allows the grant of permits at the discretion of the Department of Health, to a number of unqualified persons who had been for at least five years practising dentistry in Palestine and who apply for the permit within one year from the date of promulgation of the Ordinance. Such permits are renewable annually and it is improbable that the number granted will exceed twenty.

39 women were licensed to practise midwifery, of whom 23 were trained in Palestine.

LICENSES GRANTED TO DOCTORS, PHARMACISTS, DENTISTS AND MIDWIVES - 1926.

			Nationality.																														
			Sex.	Algerian.	American.	Armenian.	Austrian.	British.	Bulgarian.	Chinese.	Czecho-Slovak	Dutch.	Egyptian.	Esthonian.	French.	German.	Greek.	Hungarian.	Italian.	Latvian.	Lettish.	Lithuanian.	Palestinian.	Persian.	Polish.	Roumanian.	Russian.	Swedish.	Swiss.	Syrian.	Turkish.	Ukranian.	Withdrawn.	TOTALS.	GRAND TOTALS.
Medicine	Licenses granted.	Prior to 1926	M	1	14	12	20	31	4	-	6	-	2	-	5	32	8	1	4	2	-	9	107	3	33	8	67	2	1	49	18	2	209	440	
			F	-	1	-	1	5	1	-	2	-	-	-	-	4	-	1	-	-	-	1	14	-	9	1	38	-	-	-	-	3	69	81	
		During 1926	M	-	1	1	-	2	1	-	1	-	-	-	-	4	1	2	-	-	1	1	15	-	14	1	16	-	-	1	-	1	9	63	
			F	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	6	-	26	-	-	-	-	2	13	38	622
Pharmacy	Licenses granted.	Prior to 1926	M	-	4	12	4	-	1	-	1	-	1	-	1	4	3	-	-	1	1	-	50	-	6	1	22	-	1	21	3	2	44	139	
			F	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	-	3	-	6	-	-	-	-	-	5	17	
		During 1926	M	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	7	-	-	1	4	-	-	1	-	1	13	17	
			F	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	2	-	4	-	-	-	-	-	5	9	182
Dentistry	Licenses granted.	Prior to 1926	M	-	4	2	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	1	15	-	5	2	18	-	1	3	1	-	25	55	
			F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3	24	-	22	3	43	-	-	-	-	3	65	99	
		During 1926	M	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	2	-	-	--	1	-	2	6	
			F	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	1	3	-	17	4	12	-	-	-	-	1	22	41	201
Midwifery	Licences granted	Prior to 1926.	F	-	3	6	3	12	-	-	1	-	2	-	1	8	1	1	-	1	-	5	59	-	19	1	31	1	1	10	8	4	14	178	
		During 1926	F	-	-	1	-	3	-	-	-	-	-	-	-	1	-	-	-	-	-	-	14	-	8	1	5	-	-	2	-	4	6	39	217

(p) International Opium Convention.

In April, under instructions from the Secretary of State, the Chief Secretary became the authority responsible for the issue of Import Certificates.

114 Import Certificates were issued during the year, the import of dangerous drugs being as follows:-

Medicinal Opium.	17,760	grammes.
Morphine and its salts.	1,663	"
Heroin " " "	334	"
Cocaine " " "	9,040	"
Codeine " " "	7,320	"
Pantopon.	92	"
Dionin.	1,461	"
Extract of Cannabis Indica.	567	"

The chief exporting countries were France and Germany.

The restrictions against the importation of the products of Messrs Hoffman-La Roche & Company of Switzerland were withdrawn in September under instructions from the Secretary of State.

Import Certificates were refused in respect of the products of a French firm which had contravened international and local legislation by sending Dangerous Drugs into Palestine before an Import Certificate had been issued.

Regulations under the Dangerous Drugs Ordinance 1925 had been prepared and at the end of the year were ready for promulgation and a Dangerous Drugs Amendment Ordinance, designed to bring Palestinian legislation into conformity with the recommendations of the International Opium Convention 1925, was under consideration. Assistance was given to the Transjordan Government in the preparation of a Dangerous Drugs Ordinance for that country.

There is little evidence of drug addiction in Palestine but hashish and opium are the chief drugs in which illicit traffic takes place.

During the year there were 17 seizures of Dangerous Drugs by the police and Customs authorities. In each instance the drug seized was hashish but the quantities were very small; in only two of the seizures was the amount greater than one kilogramme.

IV. SANITARY ADMINISTRATION.

(a) Water Supplies.

The rainfall in Jerusalem during the winter 1925/26 was 17.37 inches and, although better than the extremely low rainfall of the previous year (12.13"), was still much below the average for the past 65 years (26.64").

Solomon's Pools with a storage capacity of 40,000,000 gallons, held at the end of the rainy season only 18,000,000 gallons. One third of this amount, stored in the lowest of the three pools, consisted of a mixture of spring and surface water; the surface water having been collected from a village area was considered unsafe for drinking purposes.

The 'Arrub springs, which in the past have provided the bulk of the water for the Jerusalem public supply, did not start to flow until March, their yield averaged less than 70,000 gallons a day and they were completely dry by the middle of October.

The water trains from Lydda were necessary until 31st March, after which date they were discontinued.

As the result, however, of the experience of five years of low rainfall, the people of Jerusalem had taken precautions to have their rain-water cisterns repaired and in good order and the cisterns in the city were generally well filled when the rains ceased in April.

Pumping from the Irtas Spring which in 1925 had been connected to Solomon's Pools, provided 40,000 gallons a day until 1st June.

Sir John Jackson Ltd., started work on the 'Ain Farah scheme early in the year and on 15th July this supply was officially opened by H.E. the High Commissioner. An average of 180,000 gallons a day, was obtained from this source and for several months during the summer no other water was available for the public supply. The scheme, although developed merely as a temporary measure, will probably remain in use for many years to come. The purity of the water at its source is unquestionable, but chlorination of the supply was necessary for the first few months to guard against possible contamination from the new pipes and reservoirs.

In September the situation became so difficult, that the doubtful water which had been collected in the lowest of Solomon's Pools and which by storage had undergone considerable purification, was after careful bacteriological examination and after the construction of an apparatus for automatic chlorination at the pump house, allowed to be brought into use.

Experience has now shown the great difficulties of relying solely on spring water for the Jerusalem supply. The collection and storage of surface water at Solomon's

Pools and 'Arrub have not been encouraged in the past on account of the lack of means of purification but the Municipality have been advised to obtain during 1927 a Bell Bros. mechanical filtration plant for Solomon's Pools to allow of surface water being used.

In spite of the shortage of water, the distribution system in the town was extended by 8905 metres of piping during the year. The supply of water through the public mains varied from 50,000 to 230,000 gallons a day.

The work on the Tiberias town supply was completed during the year but owing to differences between the Palestine Electric Corporation and the Municipality regarding the supply of electricity for the electrically driven pumps, the supply has not yet come into operation. On account of the absence of drainage in the town careful conditions have been laid down as to the amount of water to be supplied to different houses and areas, and as to the means for disposing of waste water.

Little development of the plans for a Haifa town supply has taken place.

At Acre the condition of the 200 year old aquaduct gave rise to concern.

The Beersheba water supply continued to develop, and proposals were made for building a large gravity service reservoir.

The new town supply at Gaza, constructed by the Municipality in 1925, has proved very satisfactory.

Ramallah is still without a town supply but plans have now been prepared for pumping from three springs in the Wadi 'Ain Kin'a.

In Jenin where the main spring is liable to contamination, a bore has been sunk outside the town and water found. A scheme for pumping from the bore to a gravity reservoir to supply the town is under consideration.

At Ramleh, the Municipality installed a 25 horse power Deutz engine and pump capable of delivering 35 cubic metres an hour from the bore.

A scheme for reconstructing and extending the existing very primitive town supply at Hebron was well advanced.

A large number of villages in various parts of the country improved their water supplies and many village schemes are under consideration. A noticeable feature is the gradual substitution of oil engines and pumps for the primitive camel-drawn Sakkiehs.

During the summer an investigation into the adequacy of village water supplies was undertaken by the District Medical Officers and the Geological Adviser is considering measures to improve insufficient and unsuitable supplies.

(b) Sanitary Engineer's Section.

As will be noted from the summary of work dealt with during the year, the activities of this section covered a wide variety of subjects. Special attention was given to the supervision of plans of sanitary arrangements of Government buildings, new public establishments, municipal works and schemes of development.

The Sanitary Engineer was granted leave of absence in Europe and America. He attended the Annual Conferences of the American Public Health Association, the American Society of Sanitary Engineers, the American Society of Civil Engineers. At the two first named conferences he was invited to read papers dealing with sanitary engineering developments in Palestine. The greatest courtesy was extended to him by Public Health and Sanitary Authorities in America in granting him facilities for visiting projects and installations of interest, in studying advances made in recent years in Public Health Engineering and in examining the methods of dealing with problems analogous to those arising in Palestine where sanitary engineering is a recent development.

A resume of work done by the Sanitary Engineer's Section during the year is as follows:-

Technical advice, recommendations, preparation of drawings or examination of schemes submitted for:

Water Supplies.

Temporary chlorinating apparatus Jerusalem water supply; Protection of intake from Lake for Tiberias Town Supply; Improvements Tel Aviv Water Supply; Jenin Water supply; Transjordan Frontier Force camp Shunet Nemrin.

Sewage Disposal.

Schemes in Nablus, Hebron, Jenin, Jerusalem and Tel Aviv.

House Sanitation, Plumbing and Drainage.

Standard drawings for new buildings in villages and settlements, special arrangements for Tiberias town, Tel Aviv town; camp sanitation for Transjordan Frontier Force.

Drainage Irrigation and Antimalaria Work.

Schemes at Kishon River, Ain Maiti-Zerain, Cherkaz swamp, Megiddo swamp, Ain el Kubbeh swamp, Wadi Musrara, Athlit, Nahr Rubin; New design of anti-mosquito cistern covers for villages and antimosquito covers for ventilation shafts of soil pipes.

Hospitals, Public Institutions and Quarantine Lazarettes.

Quarantine Lazarettes at Jaffa, Haifa and Maan in Transjordan; Extension or improvements of Port Disinfecting Stations Jaffa and Haifa; Fever Section - Government Hospital Jerusalem; Infectious disease annexes for Government Hospital Jerusalem, Municipal Hospitals Jaffa and Nablus; Isolation Wards Haifa Lazarette; Improvements Jaffa Municipal Hospital;

Beersheba Municipal Hospital; Epidemic Hospital Hebron; Government Mental Hospital Bethlehem; Review of plans of new Municipal Hospital Tel Aviv, Frontier Force Hospital Maan, Sanatorium Ain Gedi and Schweitzer Hospital Tiberias; preparation of standard drawings for temporary epidemic contact and isolation camp arrangements.

Public Establishments.

Review of plans of three large hotels, four schools, one theatre, proposed new buildings Hebrew University, slaughter houses at Hebron and Jaffa, Municipal stables Jaffa, standard drawings prepared of mineral water factory, public stables and small Police Post.

Miscellaneous.

A large number of drawings and diagrams for departmental purposes were prepared.

A complete set of standard sanitation drawings together with copies of the relative ordinances, regulations and the plumbing code were collected and sent as an exhibit to the Museum of the London School of Hygiene and Tropical Medicine.

Lectures and Demonstrations on sanitary engineering were given to Medical Officers, Assistant Sanitary Surveyors and Sanitary Sub-Inspectors. The Sanitary Engineer is at all times available for consultation by engineers, architects and plumbers and he devotes considerable attention to giving full and detailed explanation of the standard drawings and principles laid down by the Department as minimum requirements for new works in Palestine. The opportunity for these consultations is greatly appreciated and architects of larger projects very frequently discuss the sanitary aspect of proposed schemes with the Sanitary Engineer's Section prior to the submission of definite plans for Departmental approval.

The educative value of the Section is reflected on the general improvement of the standard sanitary engineering work throughout the country. To further this object a considerable number of standard fittings, explanatory drawings and charts have been added to the sanitation section of the Departmental museum.

(c) Municipal Sanitary Work.

The Department acts in an advisory capacity to all Municipal authorities, maintains supervision of the execution of sanitary services, makes recommendations regarding financial provision for these services, specifies the technical requirements in all matters affecting water supply, house drainage, sewerage and town planning, and exercises control over the conditions under which establishments are licensed to sell articles of food and drink. The larger Municipalities of Jerusalem, Jaffa, Haifa employ Sanitary Surveyors for the administration and management of sanitary services. The Municipality of Gaza made a similar appointment during the year. The township of Tel Aviv employs a Plumbing Inspector for the special control of sanitary work involved in new buildings and public establishments.

A feature of the year was the visit of a Consulting Engineer engaged by the Government to advise upon the main drainage schemes for the towns of Jerusalem, Jaffa, Tel Aviv and Haifa.

Programmes of capital works recommended by the Department have been prepared for all Municipalities in the Southern District and Jerusalem Division.

Jerusalem.

A survey of the town and a preliminary scheme for main drainage was completed by the Department of Public Works on behalf of the Municipality. Grants-in-aid were given by the Government to enable the purchase of an additional Meldrum Destructor and the extension and improvement of the slaughter house. The arrangements at Jerusalem for slaughtering of animals still leave much to be desired, but financial considerations prevent the construction of a new slaughter house which has long been recommended by this Department. The Municipal Sanitary Surveyor reports the notification of 2613 nuisances and the abatement of 2323. 351 prosecutions were undertaken. Public latrines were maintained and one new one constructed. Additional public lavatories are still required both in the old city and new city. 1129 cesspits were emptied and cleaned and approximately 90 pail closets attended to daily. An additional sludge cart is required for this service. Street lighting and street watering by contractors were supervised. The N.W. drainage system and disposal works were maintained. 600 metres of new drains were laid and 372 metres of old masonry sewer replaced by 6" pipe lines. A scheme for the improvement of the disposal works is in preparation by the Sanitary Engineer of the Department of Health. 1588 inspections were made in connection with sanitation of new buildings or the improvement or repair of existing buildings.

A new vegetable market has been arranged near the Jaffa Gate, and recommendations made to the Municipal Council for the construction of hawkers markets in selected sites.

Jaffa Town.

The new slaughter house has been constructed and provides proper facilities for Tel Aviv Township as well as Jaffa. Bye-laws under the Town Planning Ordinance have been approved by the Central Commission and provide the means for controlling the sanitary installations of all new buildings. Municipal stables have been built. General sanitary services similar to those in Jerusalem have been maintained.

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Tel Aviv.

The appointment of an officer of the Department to act as Medical Officer of the town and the creation of a Health Office in the town has enabled further progress in organization of the sanitary services of the town. Two new food markets have been constructed on lines approved by this Department and a Public Latrine constructed. The control of sanitation of new buildings in this town requires close supervision. A Plumbing Inspector trained by this Department is employed for this work and for the supervision of the sanitary arrangements of all establishments dealing with the sale or preparation of food and drink. A great deal of work has been entailed in endeavouring to improve the sanitary condition of areas where temporary wooden dwellings have been erected. One new area of this type was permitted to develop under conditions laid down by this Department. This area indicates what can be done by the Township under suitable administrative control to ensure that necessary sanitary requirements are observed. A section of the storm water drainage was built under the supervision of the District Engineer of the Government Department of Public Works.

Haifa Town.

Progress has been well maintained in this town. The additional up to date equipment for the scavenging and vidange services has been ordered from England. The supervision of drainage installations is now well organised. A smoke testing apparatus has been purchased and all work is inspected and tested before covering in. The Municipal Surveyor has continued his good services in meat inspection at the slaughter house with consequent improvement in the quality of meat exposed for sale.

Progress has been made in the preparation of the main drainage scheme and in certain sections where work can no longer be deferred sewers will be laid in accordance with the general scheme. During the prevalence of typhoid the sanitary condition of all houses in which cases were reported were referred to the Surveyor and improvements of drainage ordered upon the lines of his recommendations.

628 nuisance notices were served and conditions in 589 cases were remedied during the year. 521 plans of new buildings were examined and sanitary arrangements approved. 226 cases were taken to court for non-compliance with Public Establishment Regulations. 40 Prosecutions were made for defective drainage or insanitary conditions not remedied after due warning.

Bye-Laws regulating building construction and domestic drainage were submitted by the Local Town Planning Commission to the Central Commission and received approval.

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(d) Village Sanitation.

Progress in Arab villages is chiefly along lines of general cleanliness. In all districts there is an addition to the number of villages employing paid scavengers. A distinct tendency is noted in improvement of the type of new building constructed. Attention has been paid to the village schools which must be provided with sanitary conveniences in the form of pit latrines.

The prevalence of intestinal diseases in the Jewish pioneer settlements has compelled the Department to request administrative action to improve the sanitary conditions prevailing. These new settlements are for the most part provided with water supplies which are satisfactory in quality though in some cases limited in quantity. Little attention has generally been paid by the founders to the provision of sanitary requirements such as proper types of latrines, disposal of domestic refuse and general scavenging. The best conditions are found in settlements for which the Palestine Zionist Executive is still directly responsible, though even in these improvements are required. The question was taken up with the Vaad Habriuth (Health Council) of the Palestine Zionist Executive. Through the influence of this body funds were voted for sanitary improvements in certain colonies. The Department designed a standard type of privy latrine for general installation. The essential feature is a deep pit fitted with a pre-cast concrete top which can readily be kept in a clean and sanitary condition. These latrines are an improvement on the bucket type most commonly found in which the receptacle is a wooden box which cannot be kept clean and is generally overflowing. In the endeavour to improve the cleanliness of these settlements a scheme for organisation of scavenging services in small communities was prepared and circulated through the Vaad Habriuth to Jewish Authorities. To facilitate the application of Public Health regulations the Department advocates the formation of regularly constituted Local Councils in new communities. These Councils in virtue of their constitution are empowered to collect taxes and carry out essential public services. Where councils are not formed the appointment of a "mukhtar" or headman is necessary. The responsibilities of a mukhtar's duties particularly in sanitary matters are not, however, willingly accepted by individual members of these settlements. In order that the Department may establish closer contact with the colonies, the Government has approved the appointment of six Jewish Sanitary Sub-Inspectors.

(e) Licensing and Control of Trades and Industries.

This work is carried out in towns by Municipal staff acting under the advice and control of a Medical Officer of the Department. The sanitary conditions under which a trade is conducted must receive the approval of the Department before a license is issued by the Municipality. License

/fees

fees are collected by the Municipal Treasury. The proposed Trades and Industries Ordinance which was revised last year is still under discussion. The extension of control to trades established outside municipal boundaries awaits the passing of this Ordinance. An important branch of work which will be undertaken under the new Ordinance is the regulation of the conditions under which milk is produced and supplied to towns. This industry is now being developed in new colonies. In towns the number of establishments controlled were 12023 compared with 10632 in 1925. The inspection and control of articles of food exposed for sale to the public is an important branch of this work which is capable of considerable development but additional sub-inspectors are required in every one of the larger municipal areas. The municipal staff now provided are fully occupied in supervising the compliance with conditions prescribed under the licensing regulations.

No. OF TRADES AND INDUSTRIES IN PALESTINE DURING 1928.
NO. LICENSED AT THE END OF 1928.

	Jerusalem.	Ramallah.	Bethlehem.	Hebron.	Beersheba.	Jaffa.	Tel Aviv.	Ramleh.	Gaza.	Majdal.	Haifa.	Acre.	Tulkarem.	Nablus.	Nazareth.	Tiberias.	Safad.	Beisan.	Jenin.	TOTALS.
Alcohol Depots.	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	10
Attars.	28	-	-	8	4	11	-	4	19	-	9	1	-	2	-	-	-	-	-	86
Basturma Factories.	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Barbers.	84	5	11	18	6	111	67	51	29	10	72	13	19	33	15	17	13	3	1	578
Bakeries, Bread Shops & Flour Stores.	128	3	3	37	4	62	61	20	15	5	58	15	5	31	14	24	28	3	2	513
Breweries.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
Butchers and Tripe Shops.	130	4	21	25	4	55	67	21	23	8	64	2	15	33	21	18	21	5	-	557
Candle Factories.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Candle Stores.	12	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Cheese and Butter Factories.	6	-	-	-	-	-	8	-	-	-	3	-	-	2	-	-	-	-	-	19
Cigarette and Tobacco Factories.	2	-	-	-	-	1	-	-	-	-	4	1	-	3	-	-	-	-	-	11
Cinemas and Public Halls.	1	-	-	-	-	4	1	-	-	-	5	-	-	-	-	1	-	-	-	12
Coffee Grinders & Spice Merchants.	-	-	-	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	5
Confectionery and Pastry.	58	3	-	3	2	32	5	5	9	4	18	12	3	8	2	5	14	-	2	165
Cotton Beaters.	13	-	-	4	-	-	-	-	3	-	2	-	-	6	-	-	-	-	-	28
Cow Sheds.	85	7	6	3	-	-	8	99	-	-	6	-	-	-	-	2	19	-	-	235
Distilleries and Wine Presses.	22	2	8	1	-	7	3	-	-	-	7	1	-	-	-	-	6	1	-	58
Dyers.	7	-	-	9	3	5	3	4	18	14	2	1	-	-	1	-	13	-	-	80
Establishments for the retail sale of petroleum, spirif, paraffin and mineral oils.	20	1	2	-	2	-	-	-	-	-	4	2	-	-	-	-	-	-	-	31
Fish Mongers.	14	-	-	-	-	8	6	8	3	1	5	2	-	-	2	7	1	-	-	51
Flour or Corn Mills.	9	2	5	4	3	7	-	7	6	3	7	1	2	8	3	1	1	6	-	75
Furriers.	-	-	1	14	1	-	-	-	9	1	-	-	-	-	-	-	-	-	-	26
Glass Factories.	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

NO. OF TRADES AND INDUSTRIES IN PALESTINE DURING 1926.
NO. LICENSED AT THE END OF 1926.

(Continued).

	Jerusalem	Ramallah.	Bethlehem.	Hebron.	Beersheba.	Jaffa.	Tel Aviv.	Ramleh.	Gaza.	Majdal.	Haifa.	Acre.	Tulkarem.	Nablus.	Nazareth.	Tiberias.	Safad.	Beisan.	Jenin.	TOTALS.
Graneries.	27	2	5	34	7	52	14	-	37	-	64	-	-	33	8	-	-	-	-	283
Greengroceries.	133	-	9	8	7	50	29	50	68	10	92	20	36	84	31	22	25	-	4	678
Groceries.	752	43	94	157	60	516	413	227	196	45	414	58	138	237	109	127	132	91	4	3813
Gut Scrapers.	3	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	5
Hawkers.	300	34	5	-	-	92	214	18	15	-	128	-	-	-	-	-	-	-	-	806
Hotels, Boarding & Lodging Houses.	52	1	-	4	-	49	41	3	3	-	56	5	2	14	6	24	9	1	-	270
Ice Cream & Lemonade Shops.	62	-	1	-	-	46	25	3	-	-	95	9	2	1	-	17	2	-	-	263
Ice Factories.	4	-	-	-	-	3	2	-	-	-	4	1	-	-	-	1	-	-	-	15
Industries with machinery.	66	-	-	-	-	21	-	1	-	-	34	-	-	-	-	-	-	-	-	122
Inns (Khans).	5	4	-	-	2	3	-	-	6	-	-	-	5	-	5	-	-	3	-	33
Kitchens.	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Laundries.	14	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	15
Macaroni Factories.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Manure Depots and manufacturies including depots for refuse and cesspool contents and artificial manure depots and factories.	-	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	3
Matches Stores and Matches Factories.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
Milk Shops.	40	-	-	-	-	5	5	-	-	-	13	-	-	2	1	3	-	-	-	69
Milk Vendors.	264	-	-	-	-	80	71	-	6	-	-	-	-	-	-	-	-	-	-	421
Mineral Water Factories.	5	-	-	-	-	6	7	1	-	-	3	1	-	-	-	1	1	-	-	25
Oil Factories.	12	3	7	13	-	7	2	33	8	14	17	-	-	18	1	-	3	-	-	138

NO. OF TRADES AND INDUSTRIES IN PALESTINE DURING 1926.
NO. LICENSED AT THE END OF 1926.

(Continued).

	Jerusalem.	Ramallah.	Bethlehem.	Hebron.	Beersheba.	Jaffa.	Tel Aviv.	Ramleh.	Gaza.	Majdal.	Haifa.	Acre.	Tulkarem.	Nablus.	Nazareth.	Tiberias.	Safad.	Beisan.	Jenin.	TOTALS.
Paint Factories	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	8
Pharmacies and Drug Stores.	30	3	3	2	-	17	37	3	-	-	17	3	-	5	4	1	2	-	-	127
Potteries.	3	-	-	11	-	-	-	15	31	-	2	1	-	1	-	-	-	-	-	64
Poultry Shops.	32	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	37
Preserved Fruit and Jam Factories.	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	2
Public Baths.	12	-	-	3	-	9	2	3	3	-	6	2	-	7	-	-	2	-	-	49
Rag and second hand clothing Establishments.	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29
Restaurants and bars, Coffee Houses and Coffee Bars.	243	10	12	17	7	277	182	70	28	7	171	45	13	52	28	35	8	9	5	1219
Salt Mills.	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Sausage Factories.	2	-	-	-	-	1	1	-	-	-	5	-	-	-	-	-	-	-	-	9
Seed Roasters.	5	-	-	-	-	8	-	-	-	-	4	-	-	18	-	2	-	-	-	37
Slaughter Houses.	1	1	1	1	1	1	-	1	1	-	1	-	1	1	1	1	1	-	-	14
Soap Factories.	3	-	-	-	-	12	1	3	-	-	2	1	-	36	-	-	-	-	-	58
Stables.	58	-	3	6	-	3	4	11	-	-	6	9	-	22	-	4	10	-	2	138
Tanneries and Hide Stores.	11	-	2	2	-	1	1	1	-	-	2	-	4	7	1	-	-	-	-	32
Tile and Brick Factories.	13	-	-	-	-	9	-	-	7	1	11	-	-	-	-	-	-	-	-	41
Tinsmiths.	6	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Water Carriers.	48	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57
Weavers.	-	-	-	-	-	-	-	-	-	-	1	-	-	19	-	-	-	-	-	20
Hawkers Stalls.	402	-	-	-	-	-	122	-	-	-	-	-	-	-	-	-	-	-	-	524
Markets (Food & Vegetables).	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
TOTALS.	3264	128	203	394	113	1577	1427	656	543	123	1429	209	245	693	253	313	311	122	20	12023

V. RELIEF.

The number of orphans to whose maintenance Government contributes is 14. These children are accommodated in the Syrian Orphanage, Jerusalem, an institution maintained by German Protestant Funds. These children belong to the Orthodox Community and half the cost of their education and maintenance is paid by the Financial Commission of the Orthodox Patriarchate.

VI. QUARANTINE SERVICE.

(a) General.

There was a decrease in work connected with Jewish immigration, but this was more than counter-balanced by the revival of the Moslem pilgrimage. The political situation in the Hijaz once more permitted Moslems to proceed to Mecca on annual pilgrimage. This circumstance entailed the introduction of the new system, the organisation for which was completed last year, whereby this Department undertook complete control of travellers to the Hijaz during the pilgrimage season. The possibility of the route via Maan and Akaba being used necessitated arrangements for its medical control. The port of Akaba was declared closed for pilgrim ships and a temporary quarantine post opened at Maan. The Transjordan Government provided the buildings, constructed detention compounds and supplied a Medical Officer and non-technical staff. The Medical Officer received a special course of instruction in laboratory methods at the Central Laboratories of this Department from whose staff also a trained technician was seconded to the quarantine station during the period of the pilgrimage. Hospital, laboratory and disinfecting equipment was provided on loan by this Department.

The arrangements for the journey of official pilgrims through Egypt were satisfactory. All pilgrims were vaccinated against small pox and inoculated with two doses of cholera vaccine before departure. Health supervision on their return was effected by detention at El Tor, by inspection at Kantara, notification to the District Health Office at their destinations and the obligation of each pilgrim to report in person at District Health Offices after his return in order to recover the deposit of £E.3 made with the Department before leaving the country for the Hijaz.

The number of pilgrims was 224 of whom 3 died from non-infectious conditions in the Hijaz or on the journey.

A question which will become of increasing importance is the medical supervision of foreign pilgrims, chiefly from Persia, India or Iraq who seek to return to their countries via Suez and Palestine. The development of overland routes between Iraq and Damascus shows signs of attracting pilgrims on account of the rapidity of travel. It is this fact and the difficulty of supervising the health of these travellers when in Palestine, where they desire to visit the Holy Places, that present a danger to the country should epidemic disease be prevalent in the various countries traversed.

167 foreign pilgrims entered the country by Kantara on their return from the Hijaz.

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(b) Port Quarantine Work.

There was a slight increase in the number of vessels calling at Palestine Ports. 3831 ships were visited for Health inspections compared with 3475 in 1925. A case of bubonic plague was disembarked from a vessel at Haifa port. The patient and passengers were disembarked and accommodated in the lazaret for necessary observation. The ship proceeded to Beyrout for deratization and returned to disembark cargo at Haifa and Jaffa where quarantine supervision was maintained during operations in port as for a "suspected" vessel.

The enlargement and improvement of the Jaffa Lazaret was postponed for financial reasons. Special credits for additional equipment for Haifa Lazaret were approved and the equipment was received at the end of the year. Improvements to a number of the semi-permanent huts in the Lazaret were effected and work on construction of new boundary fencing commenced. Approval was given in December for the remodelling of the Port Disinfecting Station, Haifa. The project includes the provision of baggage, waiting rooms and offices which will facilitate greatly the handling of immigrants or pilgrims by all Departments concerned.

(c) Medical Surveillance of Travellers.

25,513 persons disembarking at ports were the subject of medical surveillance at their destinations. 7185 persons entering at land frontier posts were also notified for surveillance for five days.

Approximately 94% reported their state of health or were traced and found healthy.

(d) Immigrants.

13,910 immigrants and travellers permitted to remain as immigrants were recorded by the Permit Control Section as having entered Palestine during the year.

Their classification by countries of origin is as follows:-

British Isles.	220	Holland.	13	Germany.	406
Canada.	23	Belgium.	20	Austria.	214
Australia.	5			Dantzig.	26
Cyprus.	15			Hungary.	69
South Africa.	16			Switzerland.	26
Malta.	3				
India.	10				
Norway.	1				
Jamaica.	2				
Rhodesia.	1				

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Bulgaria.	104	Latvia.	111	Egypt.	249
Czeko Slovakia.	78	Lithuania.	446	Morocco.	15
Roumania.	856	Finland.	3		
Yugo-Slavia.	15	Russia.	1517		
Serbia.	2	Poland.	7394		
		Esthonia.	8		

Aden.	38	Spain.	11		
Iraq.	215	France.	91		
Yemen.	219	Italy.	78		
Abyssinia.	3	Greece.	107		
		Portugal.	2		
Turkey.	475	Rhodes.	2		
Syria.	255				
		Persia.	55	China.	11
		Afghanistan.	1		

Argentine.	54	U.S.A.	405
Brazil.	1		
Havana.	1		
Cuba.	11		
Ecuador.	2		
South America.	1		
Mexico.	4		

11,011 immigrants were medically examined at Ports on disembarkation. 6 were referred to Permit Officers on account of medical disabilities specified under the Immigration Regulations as follows: Tuberculosis 2, Idiocy 2, Blindness 1, Paralysis Agitans 1.

(e) International Sanitary Convention 1926.

The observations of this Department upon the draft Convention prepared by the International Bureau of Hygiene were submitted to Government for communication to His Majesty's representatives at the Conference. This country is chiefly interested in measures for the control of pilgrim traffic. This subject was discussed with the President of the International Quarantine Board of Egypt at a meeting at Maan and agreement as to principles affecting Egypt and this country reached. Special articles affecting the use of Akaba port as a port for pilgrims and the control of the Hijaz railway were recommended for inclusion, and have been included in the new International Sanitary Convention of 1926 - Articles 136 and 150.

VII. LABORATORY SECTION.

The Government Central Laboratories in Jerusalem constitute, as in previous years, the headquarters of the Section.

Additional bacteriological institutes, however, maintained partly by Government, partly by private funds, continue to serve the widest areas in each district, and ensure by their generous distribution and close co-operation every laboratory facility for rapid and efficient diagnosis throughout Palestine.

Extra-departmentally the greatest assistance has been rendered by the Hadassah Medical Organization with a chain of laboratories at Jerusalem, Jaffa, Haifa, Safad and Tiberias.

In 1920 the Government Central Laboratories consisted of bacteriological, chemical and entomological sub-sections. Considerable re-organization, however, marked the period 1920-1924, for, while the entomological sub-section was abolished in 1922 on account of the financial stringency then prevailing, an Anti-Rabic Vaccine-Manufacturing Institute and a Calf Lymph Establishment were successively added, but without any increase of technical staff, in 1923 and in 1924 respectively.

During the year the staff of the bacteriological sub-section has, in addition to the routine examination of over 30,000 specimens, undertaken the preparation and distribution of all vaccines required, both prophylactic and curative.

Indeed, the production of various forms of vaccine totalled 615,485 doses, and has been regarded as perhaps the most outstanding feature of the year's work. Moreover, the undertaking to supply during 1927 an anti-plague vaccine and a satisfactory single-dose anti-rabic prophylactic for dogs will still further extend the bacteriological sub-section's sphere ot activity.

The use made of the services of the chemical sub-section by Government Departments and by private commercial enterprises continues to increase, and as a result of their continued dealing with chemico- and medico-legal specimens and with samples released from Customs, the Central Laboratories may now with reason be regarded as vital factors in the administration of justice and in the collection of revenue.

The following report, while designed to give some account of the nature and scope of the Section's activities during 1926, will, as formerly, be confined to the work carried out in Jerusalem at the Central Laboratories, reference being made only when necessary for the sake of completeness to the more important diagnostic data furnished by District Institutes.

The Establishment List of the Central Laboratories is as follows:-

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Administrative Officer-in-charge = Asst. Director (L),
Department of Health.

Senior Staff.		Junior Staff.	
Government Analyst.	1	Senior Attendants.	2
Bacteriologist.	1	Junior Attendants.	3
Asst. Analyst.	1	Clerical Staff.	2

Labour Service.

Cleaners.	3
Messenger.	1
Stable-man.	1

The Report will be presented in the order shown in the subjoined index.

A. BACTERIOLOGICAL SUB-SECTION.

1. Routine Diagnosis.
2. Medico-legal investigations.
3. Public Health Examinations.
4. THE VACCINE INSTITUTE.
   - (a) Anti-Rabic Division.
   - (b) Anti-Variolous Division.
   - (c) General Vaccine Division.
5. Courses of Laboratory Instruction.
6. Research.

B. CHEMICAL SUB-SECTION.

1. Summary of work done.
2. Government Departments and other sources of samples submitted.
3. Notes and Special Investigations.
4. Appendices.

NOTE.

Tables included at appropriate places throughout the Report are:-

Table I Record of Bacteriological Examinations performed during 1926.
Table II Laboratory Findings in Malaria for 1926.
Table III Statistical Record of Anti-Rabic Work (1923-1926).
Table IV Government Anti-Rabic Institutes' Statistics for 1926.
Table V Control of Rabies. Yearly Statement (1926).
Table A Record of Chemical Examinations for 1926.
Table B Record of Milk Analysis in Jerusalem and Districts.

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A. BACTERIOLOGICAL SUB-SECTION.

(1) ROUTINE DIAGNOSIS.

Under this head are included total findings recorded from the various bacteriological institutes in Palestine. Investigations of a routine nature numbering 107,929 have been carried out during the year, both in respect of human and of veterinary pathological conditions. The number and nature of the more important examinations performed, together with the findings of interest, are given in Table I which also indicates the parts played by Government and by non-Government laboratories respectively.

(a) Blood films.

Table II details the laboratory statistics of Malaria for 1926. Distribution, type and incidence shown can, of course, be considered only from a laboratory point of view as having obtained to the degree indicated in the areas served by the laboratories at Jerusalem, Jaffa, Haifa, Tiberias and Safad.

In all 27,345 examinations were made and 3492 proved positive, viz: P.vivax 2406; P.malariae 154; P.falciparum 1664.

With the laboratory statistics of six complete years of diagnostic work now available in this subject (1921-1926), it would seem desirable briefly to examine into the relative degree of incidence of the three forms of malaria in Palestine. Although admittedly the figures presented can form no absolutely reliable index, yet a determination based on 165,803 examinations with 23,745 positive findings, eliminates the possibility of a very wide margin of error.

Year.	No. of films examined.	Benign T.	Malignant T.	Quartan M.	Total all forms.
1921	25,000	1916	1093	86	3095
1922	30,000	3374	2319	61	5754
1923	35,253	4230	891	99	5220
1924	25,619	1874	807	56	2737
1925	22,586	1932	749	34	2715
1926	27,345	2406	1664	154	4224
6 years	165,803	15,732	7,523	490	23,745

Percentage of relative incidence, therefore, may be reckoned to be: Benign Tertian 66.25; Malignant Tertian 31.69; Quartan Malaria 2.06.

Variations in the percentage of incidence over the six years may thus be tabulated:-

	1921.	1922.	1923.	1924.	1925.	1926.
Benign Tertian.	61.9	58.6	81.	67.7	71.2	57.
Malignant T.	35.3	40.3	17.	29.3	27.6	39.4
Quartan.	2.8	1.1	2.	2.	1.2	3.6

From an occurrence of but 490 cases in the period under review, it is impossible to draw accurate conclusions in regard to Quartan Malaria except to emphasize its rarity as compared with the Benign and the Malignant Tertian forms. This observation arising from the fact that during the past 6 years the quartan form has but twice exceeded the relative incidence of 2% - on both occasions due to a localized outbreak - is quite at variance with the published findings of Prof. Mühlens (1).

This investigator, as a result of researches carried out here in 1912-1913, reported that the Quartan parasite accounted for 20.10% of all cases of malaria (2071) occurring during December 1912 and January 1913, diagnosis being made by the thick drop method.

The diagnosis of the Quartan form since 1923 has been carefully controlled in Palestine, as each film diagnosed positive by District Bacteriological Institutes must be forwarded to the Central Laboratories for corroboration.

(b) Blood examinations.

Red and white cell enumerations totalled 7494; estimations of the haemoglobin index 2355; differential counts 3067.

From 3117 specimens received for blood culture, growth was obtained on 350 occasions, viz: B.typhosus 305; B.paratyphosus.A 6; B.paratyphosus.B 16; B.pestis 1; Streptococcus 14; Staphylococcus 7; B.enteritidis Gaertner 1.

(c) Histological Sections.

The histopathology of 136 tissue specimens was determined. Of the total 76 brains extracted by veterinary officers from suspectedly rabid animals and forwarded for diagnosis to the Central Laboratories, in 60 were Negri bodies demonstrated.

Among human pathological conditions the more important were: carcinoma 12; adeno-carcinoma 4; adenoma 2; sarcoma 2; fibroma 3; myoma 3.

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(1) "Bericht ueber eine Malariaexpedition nach Jerusalem" by P. Mühlens. Centralblatt für Bakteriologie, Abt.1, Orig. Bd.69, Heft 1.

(d) Serum reactions.

(1) Agglutination tests were performed on 12,126 sera during the year. Positive reactions (to the extent shown within brackets) were obtained in diagnostic dilutions with the following organisms:- B.typhosus (1331), B.paratyphosus A (203), B.paratyphosus B (221), B.paratyphosus C (2), M.melitensis (3), B.abortus (13), B.proteus X2 and X19 - (Weil-Felix reaction for Typhus) (131).

At the Central Laboratories the original Widal reaction with its quantitative estimation of agglutination titre - quantitative serum analysis - has, in the serological diagnosis of the enterica, been gradually superseded by the method of qualitative receptor analysis - so called from its essential ability to distinguish between the two qualitatively different receptor types normally possessed by the organisms of this group.

Now, if prophylactic vaccination or a previous typhoid infection could be excluded, then the etiological diagnosis of the disease is ensured on the application of this method by the appearance within two hours' time of large flake agglutination.

But in Palestine where anti-typhoid vaccine is administered as a routine procedure to immigrants and case-contacts, and where during the Great War a large proportion of the inhabitants had been similarly inoculated or had suffered from the disease itself, the difficulties likely to be encountered in diagnosis by agglutination tests are many.

A method, therefore, which claims to abolish these difficulties by making differentiation possible between the agglutination due to actually-present disease and that caused either by vaccination or "anamnestic reaction" is one worthy of fullest test, especially when, in addition, it allows of sero-prognosis and indicates the desirability or otherwise of serum therapy.

During the year over 1000 agglutination tests have been carried out here by this method, and in each case a quantitative serum analysis, performed in accordance with Dreyer's technique, has served as control.

It is now felt that the claims advanced in favour of the method have received sufficient confirmation to justify its adoption as standard in these laboratories for the routine diagnosis of the enterica.

This "qualitative receptor analysis" has also been applied here to the diagnosis of Typhus fever. In this case positive sera show early in the disease a well-marked small-flake agglutination in a dilution of 1:100 with both the H-and O-forms of the B.proteus X19.

The importance of accurate diagnosis in a disease which in Palestine, both in respect of onset and symptomatology may frequently be confused with a light paratyphoid fever, cannot be over-emphasized.

While both for the enteric and typhus fevers, then, the method of qualitative receptor analysis furnishes ideal means of diagnosis, granted experience and skill on the part of the performer in reading results, it has to be conceded that success can only be achieved by attention being concentrated on the choice of suitable sub-cultures and on the preparation of suitable media for effective transplant. Thus the colonies used for sub-culture must be invariably of the "smooth" variety; the agar medium must be prepared from fresh meat bouillon and sterilised at 100°C in the autoclave without pressure; its reaction must be pH.7.4, and agar slants must only be used as long as they contain water of condensation. As an example, media titrated to the neutrality point for phenolphthalein and slants lacking humidity alike cause inhibition in the development of the labile receptors.

(2) Diagnosis of Syphilis.

The Wassermann Reaction was carried out on 2738 sera submitted from all districts to the laboratories in Jerusalem. Of the total number 568 proved positive. Flocculation tests have been definitely abandoned in view of the numerous fallacies which must inevitably arise when sera requiring several days in transit have to be investigated.

(3) Precipitin Reactions.

It has been found necessary to apply this specific protein test on twenty occasions to differentiate human from other blood. On two occasions the blood stain under examination was shown by this method to be of human origin.

(4) Other Complement - Fixation Tests.

The Besredka reaction for Tuberculosis was performed 11 times with 5 positive readings. The Weinberg test for the presence of Echinococcus was successfully employed twice.

(e) Urines.

26.620 urines were subjected to microscopic and bacteriological examination.

From catheter specimens the B.typhosus was cultured 16 times, the B.coli 75, the B.coli communior 10, the Gonococcus 2.

Ova of the S.haematobium were discovered on 55 occasions. The distribution of the infected snail would appear with one exception to be limited, despite careful and continuous search, to an area within ten miles of Jaffa. The exception is Um Khalid near Tulkarem where, although since 1920 it has been recognised that urinary schistosomiasis exists to a slight extent among the inhabitants, now for the first time bullinus snails were found to be harbouring the specific cercariae.

(f) Sputa.

The Tubercle Bacillus was found to be present in 463 specimens out of the total 2671 submitted.

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(g) Pharyngeal Swabs (including Naso-pharyngeal).

These numbered 2726, the more important pathological findings being B.diphtheriae 210; Vincent's Angina 19; Meningococcus 1, Streptococcus haemolyticus 1.

In addition, 55 nasal smears were taken from inmates of the Leper Hospital, Jerusalem, and of these 19 showed the presence of B.leprae. Periodic examination of such lepers forms part of the routine at the Central Laboratories mainly with a view to determining effects of treatment. Several medical schools in the United Kingdom have been supplied with pathological material taken from these lepers and have found it of service for teaching purposes.

(h) Urethral Smears.

626 examinations were performed and gonococci found on 91 occasions.

(i) Faeces.

Investigations carried out on faecal specimens received during 1926 numbered 22,227 microscopic and 9094 cultural.

Findings by microscopic examination may thus be summarized: Protozoa: Entamoeba histolytica (free) 1963; E.histolytica (cyst) 255; Giardia intestinalis 319, Chilomastix Mesnili 6; Trichomonas intestinalis 659.

Worm Ova: Ascaris lumbricoides 834; Trichuris trichiura 1638; Enterobius vermicularis 89; Ankylostoma duodenale 21; S.mansoni 7; T.saginata 211.

In regard to A.duodenale, the relative unimportance of ankylostomiasis may be guaged from the returns made for the past 6 years, viz: 1921 - 1 case; 1922 - 2 cases; 1923 - 1 case; 1924 - 26 cases; 1925 - 8 cases; 1926 - 21 cases; i.e. 59 cases in 6 years.

Petah-Tikvah, a Jewish Colony of some 5000 inhabitants 12 kilometres N.E. of Jaffa with its well-irrigated orange groves is regarded as the principal focus of infection, and so far, hookworm has not been found in other localities equally favoured as regards water and soil. Investigations undertaken to ascertain the incidence, if any, among the Arab population of villages in the vicinity from which the labour for the colony's orangeries is mostly derived, showed infection with ankylostomiasis to be about 6 per cent, but it is noteworthy that specimens taken from the Arab school children there have always been negative. Both microscopic examination and cultural investigation are carried out in the search for A.duodenale.

Although on seven occasions the ova of S.mansoni have been discovered, there is no authentic case of intestinal schistosomiasis having been contracted in Palestine. Such cases as have been reported appear to have derived their infections from either Egypt or the Yemen. So far the specimens of Planorbis found here do not belong to the recognised intermediate hosts of S.mansoni.

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On the relative incidence of helminthic infection in Palestine it is now possible to make more accurate pronouncement.

Order of importance as judged by frequency of occurrence in 80,942 examinations may be put as follows:-

Name of Helminth.	No. of persons infected.	Percentage of total positive findings.
Trichuris trichiura.	6745	53.1
Ascaris lumbricoides.	4587	36.1
Taenia saginata.	769	6.0
Enterobius vermicularis.	254	2.0
Hymenolepis nana.	229	1.8
Ankylostoma duodenale.	61	0.5
Schistosoma mansoni.	60	0.5

Total positive findings - 12,705.

Results from cultural examinations were:-

B.typhosus 257; B.paratyphosus.A 7; B.paratyphosus.B 7; B.dysenteriae Shiga 54; B.dysenteriae Flexner-Y 269; V.cholerae 1; B.Morgan's (No.1) 40.

(j) Cerebro-Spinal fluid.

Lumbar puncture was carried out on 204 occasions. Microscopic and cultural examinations showed the following organisms to be causal agent of meningitis to the number indicated: Meningococcus 4; Pneumococcus 40; Tubercle bacillus 2; Streptococcus 20.

(k) Rabies.

On behalf of the Veterinary Authorities 76 microscopic investigations were made on brains extracted from suspectedly rabid animals. In 59 cases Negri bodies were demonstrated.

The biological test was applied on 38 occasions; in 21 cases a positive result was obtained.

(l) Smears from Conjunctiva.

Examination of 5114 conjunctival exudates revealed the presence of B.Koch-Weeks 2517 times, B.Morax-Axenfeld 354 times.

TABLE I.

RECORD OF BACTERIOLOGICAL EXAMINATIONS PERFORMED DURING 1926.

Nature of Specimens.	Total Examinations. Govt. Labs	Total Examinations. Other Labs.	Nature and Number of Positive Findings.	Govt. Labs.	Other Labs.
Blood Films.	9570	17775	P.vivax.	1770	636
			P.malariae.	58	96
			P.falciparum.	1212	452
			Sp.recurrentis.	7	3
Blood Cultures.	910	2207	B.typhosus.	82	223
			B.paratyphosus A.	1	5
			B.paratyphosus B.	2	14
			B.pestis.	1	0
			Streptococcus.	2	12
			Staphylococcus.	1	7
Histological Sections.	136	0	Negri bodies.	59	0
			New Growths.	20	0
Water for Analysis.	1525	51			
Milk for Analysis.	15	124			
Serum reactions.					
(a) Agglutinations.	10060	2066	B.typhosus.	722	609
			B.paratyphosus A.	39	114
			B.paratyphosus B.	50	171
			B.paratyphosus C.	1	1
			M.melitensis.	1	2
			B.proteus X19 (Weil-Felix Reaction)	85	46
(b) Diagnosis of Syphilis.	1598	1140	Wassermann Reaction.	430	138
(c) Precipitin Reaction.	20	0	Medico-Legal.	2	0
(d) Diagnosis of Tuberculosis.	0	11	Besredka Reaction.	0	5
(e) Diagnosis of Hydatid.	0	1	Weinberg Reaction.	0	1
Sputa.	734	1937	Tubercle Bacillus.	128	335
Pharyngeal swabs, including Naso-pharyngeal and Nasal.	1796	1990	B.diphtheriae.	85	125
			Meningococcus.	1	0
			Vincent's Angina.	1	18
			B.leprae.	55	0
			Strepto-haemolyticus.	2	0

Nature of Specimens.	Total Examinations.		Nature and number of positive findings.		
	Govt. Labs.	Other Labs.		Govt. Labs.	Other Labs.
Urethral Smears.	343	283	Gonococcus.	65	26
Brains for diagnosis of Rabies.					
(a) Microscopical examination.	76	0	Negri bodies.	59	0
(b) Biological tests.	38	0	Rabies.	21	0
Urines.	3196	1697	S.haematobium.	44	11
			B.typhosus.	4	12
			B.coli communis.	4	71
			B.coli communior.	8	0
			Gonococcus.	2	0
Faeces.					
(a) Microscopic examination.	2334	19893	E.histolytica (free)	76	1887
			E.histolytica (cyst)	40	215
			Giardia intestinalis	68	251
			Chilomastix Mesnili.	6	0
			Trichomonas intestinalis.	36	623
			WORM OVA.		
			Ascaris lumbricoides.	123	711
			Trichuris trichiura.	210	1428
			Enterobius vermicularis.	6	83
			Ankylostoma duodenale.	2	19
			Taenia saginata.	26	165
			S. mansoni.	1	2
(b) Cultural examination.	4522	4572	B.typhosus.	215	42
			B.paratyphosus A.	4	3
			B.paratyphosus B.	2	5
			B.dysenteriae Shiga.	47	7
			B.dysenteriae Flexner-Y.	152	117
			V.cholerae.	1	0
			B.Morgan's No.1.	40	0

From 27.345 Examinations.

Type and Locality.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.	Yearly.
BENIGN TERTIAN MALARIA.														
Jerusalem.	9	9	7	5	5	7	8	14	11	9	10	16	110	
Jaffa.	25	15	14	15	29	23	28	20	17	10	22	16	234	
Haifa.	72	57	83	43	56	119	161	54	67	49	52	69	882	
Tiberias.	49	15	7	14	26	54	62	37	25	53	129	271	742	
Safad.	5	1	7	17	22	45	46	51	26	40	110	68	436	
Total recorded.	160	97	118	94	138	248	305	176	146	161	323	440	Total	2406
MALIGNANT TERTIAN MALARIA.														
Jerusalem.	9	3	1	0	1	0	6	17	15	8	6	2	68	
Jaffa.	13	3	1	2	0	2	0	0	0	6	16	9	52	
Haifa.	45	37	40	18	0	22	39	21	81	62	68	37	470	
Tiberias.	14	6	4	3	5	20	21	31	26	70	122	131	453	
Safad.	20	9	0	0	0	17	66	42	73	74	132	188	621	
Total recorded.	101	58	46	23	6	61	132	111	195	220	344	367	Total	1664
BENIGN QUARTAN MALARIA.														
Jerusalem.	0	1	1	0	0	1	0	2	4	2	3	1	15	
Jaffa.	0	0	0	0	0	0	0	1	0	0	0	5	6	
Haifa.	22	11	9	8	0	0	8	2	1	2	2	1	66	
Tiberias.	2	3	6	1	1	4	4	4	2	4	3	7	41	
Safad.	0	0	0	0	0	5	7	0	2	10	2	0	26	
Total recorded.	24	15	16	9	1	10	19	9	9	18	10	14	Total	154
Total Monthly Findings. (all forms).	285	170	180	126	145	319	456	296	350	399	677	821	Yearly	4224

Note.- From this point onwards the Report deals solely with the work performed at the Department's Central Laboratories, Jerusalem.

(2) MEDICO-LEGAL INVESTIGATIONS.

As in previous years the work of greatest importance in this branch has been investigations, on behalf of the Legal Authorities, into the nature of stains found on clothing or belongings of persons suspected of murder or of criminal assault.

The precipitin test ultimately employed to determine the source or origin of blood, not being in itself a "blood test" but a specific protein reaction, requires preliminary demonstration that the stains under examination are indeed blood stains, on proof of which only is the differentiating serological test to be applied.

For the preliminary detection of blood the routine followed here is:- (a) chemical: the benzidine test; (b) microscopical: the search for corpuscles on the one hand, and the production and exhibition of haemoglobin and haemin crystals on the other; (c) spectrum analysis.

The various anti-sera used in the performance of the precipitin test are largely manufactured in these laboratories.

During the year 20 such complete investigations were carried out, and on two occasions the stains were proved to have been caused by human blood.

To determine the presence or absence of spermatozoa in stains on clothing, investigations have been undertaken 17 times and 4 positive findings obtained; the stained fabric is immersed in 0.5 - 0.75 per cent. glacial acetic acid in distilled water, and slides are taken at frequent intervals from the moistened cloth, dried, and treated with haematoxylin and eosin, by which staining method the various parts of the spermatozoon have been found most easy of differentiation.

(3) PUBLIC HEALTH EXAMINATIONS.

(a) Water.

Complete bacteriological examinations have been carried out on all samples of ordinary drinking water, aerated waters and ice submitted through District Health Offices. The total number of specimens investigated was 1525.

Such bacteriological control ensures for public water supplies declared free from pollution by the Sanitary Authority and for the products of aerated water factories and of ice Syndicates alike a standard of purity being maintained in accordance with Public Health requirements.

The examination of samples taken from rain water cisterns and storage tanks determines suitability for drinking purposes or indicates degree of chemical disinfection necessary.

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(b) Milk.

During the year 139 milk samples have been examined. Investigation has mainly consisted of a numerical estimation of bacteria per cubic centimetre of milk, as thereby opinion can be offered as to the cleanliness and freshness of the sample.

In a small number of cases, mixed milk has been submitted by dairy farmers so that the presence or absence of tuberculous cows from a herd may be determined. The method in force for such investigation is as follows:- Collection is made from 30 c.c. milk centrifugalized at high speed of 10 c.c. of the sediment and lower milk. 4 c.c. cream are diluted with distilled water and injected into two guineapigs; into two other guineapigs 3-5 c.c. of the sediment are injected, also subcutaneously.

(c) Examination of imported Shaving Brushes.

In accordance with instructions issued in the Official Gazette, dated 16th March 1920, shaving brushes imported into Palestine are subject to inspection by the Medical Authorities. Customs Superintendents are required to forward five per cent of all such consignments to the Central Laboratories for examination.

The continued application of this measure since 1920 has precluded the entry into this country of anthrax-infected brushes.

The total number of brushes examined during 1926 was 338.

(d) Examination of imported vaccines and sera.

A regulation has been in force since 1922 to the effect that Medical Officers examining goods detained in Customs may not sanction the release of consignments of certain preparations until a report has been received upon a sample sent to the Central Laboratories.

The laboratory report states whether or not the consignment is to be admitted into the country.

The preparations referred to are:- bacterial cultures, vaccines, sera, virus (rat killer, mouse killer and the like), and all preparations of bacterial origin. In the case of curative and prophylactic vaccines and sera the question is largely a determination of sterility.

More recently, to the number of firms of which the products, as a result of this strict laboratory control, have been permitted entry without further need of examination, has been added an official list published by the American Public Health Service.

During the year 48 samples of this nature were forwarded to the laboratories, and on four occasions entry to Palestine was refused.

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(e) Examination of preserved foods exposed for sale.

The fact that in Palestine many essential foods both of animal and of vegetable origin are entirely lacking or insufficient for daily needs at practically all seasons in each locality has made the general use of food substances preserved against natural decomposition imperative.

Such substances are imported largely but are also to a considerable extent prepared locally.

No matter what method of preservation has been employed - exposure, in the case of fish, meat and fruits, to the combined action of sun and air with resultant loss of moisture rendering bacterial growth impossible, the addition of chemicals such as salt and vinegar in the production of pickled meats, storage at low temperature, or sterilization in the process of "canning" - the most careful laboratory supervision is exercised on all such foods exposed for sale. Laboratory opinion as to the quality of preserved fish is requested daily during the hot season, and determination as to suitability of any particular food for human consumption a daily routine in both bacteriological and chemical laboratories.

(f) Identification and Examination of Snails.

One result of the unremitting search which has continued since 1920 in Palestine for the intermediate hosts of S.haematobium has been the discovery of a new endemic focus at Um Khaled, near Tulkarem.

Previously it was considered that the distribution of the *Isodora contorta* was limited to the Jaffa area, although several cases of urinary schistosomiasis had indeed occurred at Um Khaled.

Snails collected at Um Khaled were forwarded for specific identification to the British Museum (Natural History) where Major Connolly reported the species to be *Isodora truncata* Fer.,- (= *hemprichii* and *brocchii* Ehrn., *contorta* Mich., *maresi*, *raymondiana*, and *brondeli* Bgt., *sericina* and *schackoi* Jick., *dybowskii* Fischer, *innesi* Pallary, and *tiberiadensis* Prest.,) - the synonymy being that published by Annandale (Indian Jl. of Medical Research, vol.X, 1922 pp.482 et seq.).

The specific name given to the specimen is *truncata* but it is the same form as that which, under the name of *contorta* is incriminated with the dispersal of Schistosomiasis in the Mediterranean, Africa, and the Middle East generally.

(g) Examination of Rats for Plague.

On account of the fact that within recent years bubonic plague has occurred on several occasions at Jaffa and Haifa, systematic rat catching is regularly practised in the port towns and in the commercial areas of ports in order that examination of rats for plague may be effected.

The actual laboratory investigation is normally conducted by technical officers trained in this work at the Central Laboratories, and selected officers must have shown themselves thoroughly conversant with the technique of rat examination in force here which lays greater stress on the value of macroscopic observations than on microscopic methods.

A daily record kept at the port laboratories indicates the number of rats dealt with and the dates; the quarter of the town affected; the sex and size of the rat, whether Mus rattus or Mus norvegicus, and whether trapped or found dead.

The record of a plague-infected rat is kept in greater detail:- Date of examination; Species of Rat; District affected; presence of subcutaneous injection, pleural effusion, purulent or caseous foci; bubo or other lesions; condition of liver, spleen and lymphatic glands; diagnosis from gross lesions, diagnosis from smears, cultures obtained, inoculation of guineapig and vaccination of guineapig, date suspicious, date positive.

Out of a total 5808 rats examined during the past four years 57 have proved to be infected with Pasturella pestis.

(4) THE VACCINE INSTITUTE.

The part played on behalf of the Public Health of Palestine during 1926 by the Vaccine Institute - principal division of the bacteriological sub-section - may best be appreciated by reference to certain general and financial considerations.

Not a single case of hydrophobia occurred in Palestine (or in Transjordan) during 1926, a condition of affairs believed to be without precedent. A complete absence of small pox was one of the most striking features in the medical history of 1925, and in 1926 there were but three cases in all.

These desirable results are generally admitted to be largely attributable to the efficacy of the anti-rabic and anti-variolous vaccines prepared at the Central Laboratories.

The manufacture on a colossal scale of anti-typhoid vaccine was, taken in conjunction with other preventive measures, instrumental in checking enteric fever epidemics - actual and threatened - in the Emek and in other districts of Palestine.

During the period 1920-1926 no case of cholera occurred. The potential danger of its introduction lies in the return from Mecca of the annual Moslem Pilgrimage.

The pilgrimage from Palestine is protected by the anti-cholera vaccine prepared at the Department's Central Laboratories.

The immunity so far enjoyed is felt to be in large measure due to the vaccinal prophylaxis enjoined on all prospective pilgrims, and experience here corroborates part of the opinion recently expressed by the second sub-committee on cholera epidemiology (1) "Anti-Cholera vaccination is considered today the most efficacious method of preventing the spread of the disease; while anti-cholera vaccination, which protects for a period of six months, is the method of choice in fighting epidemics. Its use in a systematic way permits the arrest of a commencing epidemic or the extinguishing of an epidemic focus at its onset".

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(1) Anon. Bull. Mensuel, Office International d'Hygiene Publique, Paris, Vol.18, August 1926, pp.878-881.

The manufacture of all necessary vaccines by the bacteriological staff of the Central Laboratories has effected an economy to Government of over £E.6000 during 1926. The total quantity of vaccine produced was 615,485 doses the value of which, at current purchase prices, may be put at £E.6316.

Now the total cost to Government of the entire laboratory staff (bacteriological, chemical and clerical) and of materials is £E.4982. It is therefore gratifying to be able to state that, humanitarian considerations aside, the Laboratory Section is actually of financial assistance to Government.

(a) The Anti-Rabic Division.

Departmental policy in anti-rabic treatment is complete decentralisation. The vaccine is prepared by the staff of the bacteriological sub-section in the Central Institute, Jerusalem, from which it is distributed to the various treatment stations established at Jaffa, Ramleh, Gaza, Haifa, Acre, Tiberias, Nablus, Tulkarem, Hebron and Beersheba. Issue is also made to Transjordan and to the Royal Air Force both in Palestine and in Transjordan.

So remarkable has been the success of the Department's anti-rabic procedure that new treatment centres are now in process of formation in the more populous of the Jewish Colonies such as Petah Tikvah, Affuleh, Ain Harod, Nahalal.

The Central Institute, however, is not only responsible for the manufacture and issue of all the anti-rabic vaccine required, but, by acting as the Jerusalem treatment station, it serves also to control the efficacy of the product.

As in previous years it is a carbolized virus which is employed here, a virus killed by the combined action of phenol (1 per cent.) and heat (37°C for 24 hours), while the vaccine used in treatment consists of a 1 per cent brain emulsion in 0.5 per cent carbolic solution.

The universal system of dosage practised provides for each person treated administration of the same total quantity of nervous substance - 0.7 grammes; i.e. 5 c.c. daily over 14 consecutive days - 2.5 c.c. being administered intracutaneously on each side of the abdomen.

During the period 1st May 1923 to December 31st, 1926, the number of persons treated has been 3146, a yearly average of 858.

Two different dosages, however, have been employed since the inception of anti-rabic treatment decentralisation in Palestine. During the first period the original KASAULI method (2 c.c. of a 1% emulsion daily for 14 days) was tried, but it was abandoned later in favour of the method now standard for Palestine - 5 c.c. of a 1% emulsion daily over 14 days.

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The advantage of adopting an increased dosage will become apparent on reference to the following data, which make the two periods of different dosage comparable.

(a) General Statistics.	1st period 2 c.c. daily.	2nd period 5 c.c. daily.
No. of persons treated.	886	2260
No. of unnecessary treatments.	138	817
No. of regular and complete treatments.	748	1443
Total deaths.	9	5
Death rate.	1.2%	0.35%
"Failures" of treatment.	4	0
"Failure" rate.	0.5%	0
(b) Statistics of patients-at-risk.		
No. of persons definitely-at-risk:		
(a) Proved by laboratory investigation.	180	211
(b) Proved by veterinary officers' certificates.	48	124
No. of persons presumably-at-risk.	213	373
Total population-at-risk.	441	708
Total deaths.	9	5
Death rate.	2%	0.7%
Total "failures".	4	0
"Failure" rate.	0.9%	0

The number of persons presumably-at-risk is strictly limited to those who have been bitten by an animal which, according to all conventions, must be considered rabid.

The General Statistical Table in use here sets forth:

Total number of persons treated in Government Anti-Rabic Centres.

Number of interrupted or unnecessary treatments - the biting animal remaining healthy after 10 days' observation.

Number of regular and complete treatments administered.

Number of cases of hydrophobia occurring during treatment or within 15 days of its completion.

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Mortality rate: comprising all deaths calculated on
patients that ran definite risk of infection.

Number of cases of hydrophobia occurring after 15 days of
the completion of treatment regularly administered,
i.e. "Failures" of treatment.

"Failure" rate.

Classification of bitten persons according to:-

Species of biting animal.
Condition of biting animal.
Location of bite.
Severity of bite.
Whether bite was made through naked skin
or through clothing.
Whether efficiently cauterized or not.

It would now appear desirable, with the statistics of four years' work compiled, to indicate the mortality after treatment for each category and for this purpose a combined table has been prepared, Table III, which does not however discriminate between the results of the different dosages employed.

From these statistics certain deductions are to be made:-

(a) The dog is the commonest, the jackal the most dangerous biting animal.

(b) The mortality rate among persons bitten by animals definitely proved to have been rabid at the time of biting is 2.5% despite treatment.

(c) Mortality is highest after wounds of a severe type, not efficiently cauterized, made through naked skin, and occurring about the head and face.

(d) There have been no "failures" of treatment since the total dosage administered over the 14 days' course has been elevated from 0.28 to 0.7 gramme of "fixed virus" brain.

With regard to the administration of the carbolized vaccine in use here, it is noteworthy that no neuro-paralytic accident has occurred among over 3000 persons treated. Further, despite complete decentralization of treatment and the unavoidable handling of vaccine by many different persons, its use is not followed by any harmful effects; thus no abscess formation has occurred although 85,000 intracutaneous injections have been given, while only occasionally are varying degrees of redness encountered due, presumably, to individual hypersusceptibility.

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Again it is a matter for satisfaction that during the year 1926 no case of human rabies was recorded although those treated numbering 477 included 187 bitten by definitely rabid animals. The total quantity of anti-rabic vaccine produced to meet the several demands was 60,465 doses, representing a value of nearly £E.2,500. Table IV gives the general statistical table for the year in detail.

Canine Prophylaxis.

In Palestine prophylactic vaccination is advised, but vaccination of dogs here is a prophylactic measure only and not a curative one. During the year each dog to which such vaccination was administered received 35 c.c. (0.35 g.) over a period of 5 days, viz: 1st day - 5 c.c.; 2nd day - 5 c.c., 3rd day - 5 c.c., 4th day - 5 c.c., 5th day - 5 c.c.

31 dogs were vaccinated and none of these animals so far has contracted rabies.

The recognition that a method of prophylaxis which occupies 5 days is not likely to be universally adopted on account of its impracticability has led to the undertaking here of certain experiments to obtain an ideal single-dose killed prophylactic.

These experiments have now been completed and caeteris paribus the new prophylactic will be ready at an early date to meet the needs of the Veterinary Authorities.

TABLE III.

Anti-Rabic Work in Palestine (Period 1923-1926) - Mortality Rates.

(a) General Statistical Record.

Number of persons treated..............	3146.
Number of unnecessary treatments........	951.
Number of complete, regular treatments..	2191.
Number of cases of hydrophobia..........	14.
Mortality rate..........................	0.64%
Number of "Failures"....................	5.
"Failure" rate..........................	0.23%

(b) Detailed Statistical Record.

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	Number treated.	Total Mortality.	Mortality rate.
1. Species of biting animal.			
Dog........................	2160	9	0.41%
Cat........................	551	0	0
Jackal.....................	233	5	2.14%
Wolf.......................	31	0	0
Fox........................	8	0	0
Other animals..............	163	0	0
2. Condition of biting animal.			
Rabid by laboratory tests...	338	14	2.5%
Rabid clinically...........	222		
3. Location of bite.			
Head and face..............	198	7	3.5%
Upper extremity............	1239	5	0.4%
Lower extremity............	1570	2	0.13%
Body.......................	139	0	0
4. Severity of bite.			
Slight.....................	2181	4	0.18%
Grave......................	965	10	1.03%
5. Interposition of clothing.			
Bite made through naked skin.	1995	13	0.65%
Bite made through clothing..	1151	1	0.09%
6. Cauterisation of wound.			
Efficiently cauterized......	82	1	1.22%
Not cauterized.............	3064	13	0.42%

TABLE IV.

GOVERNMENT ANTI-RABIC INSTITUTE.
GENERAL STATISTICAL TABLE.

* * *

January 1, 1926 to December 3I, 1926.

No. of persons treated at the Anti-Rabic Centre	Jerusalem	181
" " " " " " " "	Jaffa	267
" " " " " " " "	Haifa	147
" " " " " " " "	Ramleh	38
" " " " " " " "	Tulkarem	8
" " " " " " " "	Nablus	21
" " " " " " " "	Gaza	11
" " " " " " " "	Tiberias	24
" " " " " " " "	Hebron	5
" " " " " " " "	Acre	19
" " " " " " " "	Beersheba	4

Total number of persons treated in the various Government Anti-Rabic Centres in Palestine	725
No. of interrupted or unnecessary treatments (Biting animals remaining well after a period of ten days)	248
No. of treatments carried out regularly and completely	477
Cases of Hydrophobia occurring after 15 days of the completion of treatment (Failures)	0
Cases of Hydrophobia occurring during treatment or within fifteen days of its completion	0
Mortality rate, comprising all deaths calculated on patients that ran a definite risk of infection	0
Failure rate	0

Classification according to:	Species of biting animal.		
		Dog	520
		Cat	142
		Jackal	14
		Wolf	I
		Fox	0
		Other animals	48
	Condition of biting animals.		
		Rabid by Bacteriological and Biological Tests	81
		Rabid clinically	28
		Suspected by altered behaviour	98
		Unknown (no information available)	233
		Healthy	305
	Location of bite...		
		Head and face	35
		Upper extremity	288
		Lower extremity	361
		Body	41
	Severity of bite.		
		Severe	343
		Slight	382
	Whether bite was made through named skin or thro' clothing.	Naked Skin	432
		Through Clothing	293
	Whether efficiently cauterized or not.	Efficiently cauterized	695
		Not efficiently cauterized	32

TABLE V.

Yearly Statement of Rabies and its Control in Palestine during 1926.

Centre for Treatment.	Bitten Persons.		Biting Animals.																											
			Specification.											Total number of animals.	Condition.					Disposal.									
															Definitely rabid					Killed				Ran away.				Kept under observation	
	No. applying for advice and aid.	No. actually treated.	Wolves.	Cats.	Dogs.	Jackals.	Horses.	Donkeys.	Cattle.	Sheep.	Pigs.	Rats.	Unknown.		By Laboratory investigation.	Clinically.	Suspected rabid.	Healthy.	No information available.	Rabid.	Suspected.	Healthy.	No information available.	Rabid.	Suspected.	Healthy.	No information available.	Died within 10 days.	Remained healthy.
Jerusalem.	245	238	1	56	140	-	10	4	2	1	1	3	3	221	8	-	13	107	93	8	3	-	2	-	4	-	94	1	109
Beersheba.	5	4	-	-	4	-	-	-	-	-	-	-	-	4	-	-	-	2	2	-	-	-	-	-	-	-	2	-	2
Jaffa.	473	443	1	115	287	3	10	9	5	-	-	11	-	441	11	1	51	178	200	12	10	1	2	-	32	-	197	2	185
Ramleh.	41	38	-	1	30	-	-	1	-	-	-	-	1	33	-	1	21	4	7	1	-	-	-	-	18	-	11	-	3
Gaza.	11	11	-	1	4	-	-	1	-	-	-	-	1	7	2	-	2	-	3	2	2	-	-	-	-	-	3	-	-
Hebrón.	5	5	-	1	3	-	-	-	-	-	-	-	-	4	-	1	-	3	-	-	-	-	-	1	-	-	-	-	3
Nablus.	21	21	-	-	13	2	1	-	1	2	-	-	-	19	1	4	5	4	5	2	1	-	1	3	4	-	4	-	4
Tulkarem.	8	8	-	-	5	2	-	-	-	-	-	-	-	7	-	-	1	3	3	-	-	-	1	-	1	-	2	-	3
Haifa.	155	154	3	15	90	5	5	-	3	-	-	17	-	138	8	3	33	64	30	9	15	2	-	2	16	11	34	-	49
Acre.	19	19	-	3	8	-	-	-	-	-	-	-	-	11	2	-	-	5	4	2	-	1	-	-	-	-	4	-	4
Tiberias.	26	24	-	7	15	2	-	-	-	-	-	-	-	24	5	2	2	11	4	6	2	1	-	1	-	2	4	-	8
Total all Palestine.	1009	965	5	199	599	14	26	15	11	3	1	31	5	909	37	12	128	381	351	42	33	5	6	7	75	13	355	3	370

(b) Anti-Variolous Division - Calf Lymph Establishment.

In regard to its small pox lymph requirements, Palestine was, at the beginning of 1925, rendered independent of outside sources of supply by the opening, as an extension of the Central Laboratories, of the present Calf Lymph Establishment, the staff of which, as in the case of the Anti-Rabic Manufacturing Institute, is derived entirely from the personnel of the bacteriological sub-section.

Lymph manufacture here is normally continued throughout the period November to May, and experience has shown that intensive production during these cooler months ensures ample provision for epidemic and routine vaccination needs.

The installation of a lymph mixing machine, such as is used in the British Government's Lymph Establishment at Hendon in place of the Broyeur Latapie and Doerr's grinders previously employed, has effected economy in labour and avoidance of waste. Motive power has been obtained, in default of electric current, by the substitution of a 1/40th H.P. hot air engine for the treadle and driving wheel usually supplied.

Lack of electricity still makes it impossible to keep in cold storage reserve lymph stocks on the premises, as a consequence, therefore, the expedient of immersing in the brine tank of an ice factory all treated lymph-yields in specially designed containers has again been adopted to secure the necessary degree of refrigeration, - 8°C to - 4°C.

The most practical method of ensuring the arrival of lymph in outlying districts during the hot months of the year has been found to be at once the most simple and economical. Lymph tubes are surrounded by cotton wool thoroughly saturated with water and packed in boxes of which the lid and sides are freely perforated.

It has been proved that the enclosed lymph tubes are kept quite cool by the evaporation of the moisture, the hotter and drier the air, the cooler the tubes.

Potency of "seed" lymph has been maintained by the transfer of lymph from calf to rabbit after every third remove, the resultant, frequently confluent eruption yielding on an average from ¼ to ½ gramme of rabbit lymph pulp.

During the period of lymph production in 1926 there were obtained 442,750 doses from the 60 calves vaccinated, calves yielding from about 25 - 40 grammes each. The results shown below testify to the high potency of the various lymph batches dealt with, and tend, at the same time, to oppose the view held by many workers that no lymph weighing more than 12 grammes can be considered first class or "perfect".

The quantity produced, representing a money value of £E.2270, proved sufficient not only to supply Palestine, Transjordan and the Air Force stationed therein, but to allow to be placed in cold storage 200,000 doses as reserve stock.

In addition to the lymph required for routine and quarantine purposes, a very large demand was made by District Health Offices to enable them to carry on the vigorous campaign conducted in the early part of the year to effect the re-vaccination of school children and of the nomadic and settled tribes.

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The principal issues were: to Palestine 249,125 doses; to the Quarantine Board of Egypt 25,000, to Transjordan 18,000.

The results of vaccination were most satisfactory, thus of the 79,691 primary vaccinations performed 88.5% were successful, while the percentage of "takes" among 77,283 re-vaccinations was 73.4.

The control of lymph potency prior to issue is, moreover, a function of the Central Laboratories. During the year all primary vaccinations in Jerusalem were carried out by the medical officers of the laboratory staff.

Among 1298 children vaccinated, 1290 showed characteristic "takes" only 8 proving refractory. A potency index in the control centre of 99.4% explains the success of the year's work generally.

The standardization of all vaccine before issue is regarded as of paramount importance and is secured in these laboratories as follows:- dilutions of vaccine from 1:10 to 1:10,000 are made in normal saline and of these, measured quantities are applied to the shaved skin of a rabbit and lightly scratched in by means of a sharp needle. The lesions are carefully observed from the third day, and only such vaccines as show a high degree of potency, viz: the production of vaccinia in dilutions of 1:1000, are issued to vaccinators, and then only if they show successful "takes" on children in dilutions of 1:100.

The present absence of small pox in Palestine is unquestionably due to the various anti-variolous measures taken and these continue to be so energetically applied as to render in the future the likelihood of serious small pox epidemic remote indeed.

(c) General Vaccine Division.

In addition to the work carried out at the Anti-Rabic Institute and at the Calf Lymph Establishment, the preparation of all other prophylactic and curative vaccines has again devolved upon the bacteriological staff of the Central Laboratories.

(1) Anti-typhoid vaccine.

The occurrence during the summer months, in certain areas of Jewish colonization, of a considerable epidemic due to the B.typhosus demanded the preparation of large quantities of a purely anti-typhoid vaccine. Between June and November 65,695 doses were manufactured without additional staff and issued to the principal centres of infection. In addition an intensive vaccination campaign was conducted in Tel Aviv to secure protection for its inhabitants. The epidemic in the Emek was successfully dealt with in comparatively short time, and the results of the Tel Aviv general vaccination have been most gratifying.

The value of the anti-typhoid inoculation practised here is held to be entirely due to the extraordinary stability of the Rawling's strain of B.typhosus used in the preparation of all anti-enterica vaccines. This strain has preserved throughout a period of three years its full characteristics, on no occasion having shown the least tendency to become "rough". It is believed that in its continued "smoothness" lies its undoubted prophylactic value.

(2) Anti-typhoid-paratyphoid.

Of this, the vaccine most commonly employed in the protection of immigrants and in the inoculation of persons-at-risk generally, 41,435 doses were issued during the year. Each cubic centimetre contains 1000 millions B.typhosus and 750 each of B.paratyphosus A and B. Since the experience of the past 8 years has shown the B.paratyphosus C to be, for all practical considerations, non-existent in Palestine, that organism has not been included in the ordinary prophylactic.

(3) Anti-Cholera.

During the period under review 5140 doses were prepared and issued, the whole quantity being used to confer protection on the Palestinian and Transjordan contingents of the Mecca Pilgrimage.

The total quantity of anti-typhoid, typhoid-paratyphoid, and cholera vaccines manufactured during 1926 and the total value of such productions is shown in tabular form below:

Nature of Vaccine.	Total quantity manufactured (in doses).	Price per unit dose in m/m.	Total value £E.m/ms.
Anti-typhoid.	65,695	15	985.425
Anti-T.A.B.	41,435	15	621.525
Anti-cholera.	5,140	15	77.100

Total dosage - 112,270 - value £E.1684.050 m/ms.

(4) Autogenous Vaccines.

In all 106 autogenous vaccines were prepared on behalf of persons suffering for the most part from acne, furunculosis, or genito-urinary infections.

(5) COURSES IN LABORATORY INSTRUCTION.

Courses of intensive laboratory study were arranged on behalf of the Hebrew University's Department of Hygiene. Demonstrations in modern laboratory methods and in advanced technique were given over the period of a week, four hours daily, to physicians appointed to the medical charge of Jewish colonies. The course included, demonstration of the bacteriological examination of water and milk, instruction in anti-

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rabic procedure and in anti-variolous methods, demonstration of standard mode of preparation of calf lymph, of antirabic, of anti-typhoid and of other vaccines, the standardisation of vaccines, the method of qualitative receptor analysis in the diagnosis of typhoid fever explained and demonstrated, instruction and practice in the Wassermann Reaction, microscopic diagnosis of the causal agents of diseases commonly encountered in Palestine.

Suitable lectures and demonstrations were also given by the laboratory medical officers to the pupil nurses of the Hadassah Medical Organization.

In this case meetings were held bi-weekly and the course extended over a period of six weeks.

(6) RESEARCH.

Studies have been made in typhoid and T.A.B. vaccination, attention has been chiefly devoted along the following lines: the relative value of typhoid vaccine killed at 53°C and at 100°C respectively in the stimulation of agglutinin-production; the differences in agglutinin formation in rabbits and in human beings following inoculation with typhoid and T.A.B. vaccines; the production of co-agglutinins to the B.paratyphosus A, B, and C, and to B.enteritidis Gaertner in rabbits inoculated with monovalent typhoid vaccine; the reaction of the human body to massive doses of T.A.B. vaccine; differences in the antigenic value of typhoid vaccines obtained from different sources; detailed study of the biological properties of V.cholerae with especial regard to the diagnostic value of early saccharose fermentation; studies in haemolysin production.

Research has also been carried out in anti-rabic work. Thus the following investigations have been made:-

(a) Determination of the length of time the rabies virus ("fixed" and "street") retains its virulence when kept in glycerin at a temperature of - 4°C.

(b) Paralytic Accidents.

Experiments on rats and rabbits to determine the relative parts played by carbolized (killed) fixed virus, by virulent fixed virus, and by normal brain both carbolized and in saline in their production.

(c) Anti-Rabic Immunity.

Relative value of each of the following in its production:

2% normal rabbit brain in Saline.
2% normal rabbit brain in 1% Carbolic Acid.
2% fixed virus brain in Saline.
2% fixed virus brain in 1% Carbolic Acid.

(d) Determination of the single prophylactic dose for dogs of a 20% brain suspension killed by exposure to the combined action of 1% phenol and heat at 37°C.

(e) A study of rabies in the Muridae.

(f) The relation of dosage to body weight in Immunity.

The various studies outlined above are meantime being prepared for publication.

B. CHEMICAL SUB-SECTION.

1. SUMMARY OF WORK DONE.

It will be seen on reference to Table A that a total of 5525 samples has been examined as compared with 5512 in 1925.

The laboratory staff has also been called upon to draft regulations affecting the manufacture and sale of food, to advise on chemical questions affecting Customs and Excise and other matters and to inspect distilleries and other public establishments.

2. GOVERNMENT DEPARTMENTS, AND OTHER SOURCES OF SAMPLES SUBMITTED.

(a) Department of Health.

Under this heading the chief samples submitted have been milk, water, sewage, butter, edible oils, aerated beverages, alcoholic liquors, vinegar, drugs and disinfectants.

Of the 3800 samples of milk examined 113 or 3% were the subject of prosecutions as compared with 5.3% in 1925. (See table B).

A special request for samples of Semneh (native butter) has brought in from the various districts 213 of which 45 have been found to be adulterated. There is some evidence that intensive sampling for a short period has more moral effect than occasional sampling over a longer period.

Two samples of "Vinegar Essence" of German origin have been found to consist of 70% acetic acid.

Of eight samples of suspected cocaine submitted in connection with the Dangerous Drugs Act, two have been identified as cocaine hydrochloride, one as salicylic acid, four as mixtures of boric acid and talc, and one as a mixture of boric acid with cocaine hydrochloride.

Notes on alcoholic liquors, soda water, edible oils and sewage will be found elsewhere in this report.

(b) Legal, Judicial and Police Departments.

Under this head are included samples connected with cases of human poisoning, forgery, and accidental injury. Specimens connected with cattle poisoning will be found below under (g).

Specimens of human viscera have been submitted for examination in seven cases of death from unknown causes. In some of these cases there appeared to be circumstantial evidence suggesting poisoning while in others there was no such evidence. Arsenic has been found in considerable quantity in two of these cases. The other five yielded negative findings.

Of five specimens of food submitted for examination for poisons one specimen of dried figs and two specimens of bread contained yellow sulphide of arsenic. The other two gave negative results.

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In cases of alleged forgery thirteen documents have been submitted for expert examination. In one of these alteration in a date was detected by chemical and photographic means. In the case of three bills it was shown that parts of the signatures were forged, the inference being that stamps bearing parts of the genuine signatures had been transferred from other documents.

Thirty samples of beer concerned in a forged label case have been examined and compared with genuine samples obtained from Germany.

A sample of explosive powder, which seriously injured three boys playing with a quantity contained in a bottle, has been identified as a mixture of sulphide or arsenic and potassium chlorate. Such a powder is apparently used for making improvised fireworks.

A note on arsenical poisoning will be found below.

(c) Department of Customs, Excise & Trade.

The samples submitted by this Department have been chiefly alcoholic liquors, confectionery, drugs, dyes, perfumes and essences. Two samples of matches have been submitted under the new phosphorous ordinance. Yellow phosphorous was absent from both samples.

The Analyst has been called upon to give evidence in a case of the smuggling of motor spirit as a "turpentine substitute" and of lubricating oil as "crude oil". The duty on motor spirit is 4 piastres per gallon which is equivalent to about 25% advaloren, that on turpentine substitute would be 12 or 15% advalorem. Lubricating oil has a duty of 12% advalorem and "crude oil" is free of duty.

In all such cases one is handicapped by the absence of official definitions. In this case it was shown that the so called "turpentine substitute" was a volatile petroleum distillate which was suitable for use in ordinary motor cars, and that the flash point and distillation test did not conform to the American specifications for "petroleum thinners". The so called "crude oil" was shown to be a petroleum product lacking volatile fractions and asphaltic constituents and to be suitable for use as a lubricating oil. A conviction was obtained.

In connection with the Customs Duty Exemption Ordinance many invoices of drugs, chemicals, etc. have been submitted for scrutiny.

(d) The Geological Adviser.

In connection with the Dead Sea potash investigations six samples of potash, two or carnalite, one of magnesium chloride, and one of mother liquor have been analysed during 1926. It would appear that the preliminary investigations are now completed.

The report entitled "Production of Minerals from the waters of the Dead Sea", published by the Crown Agents for the Colonies, covers the period 1923-1925. In that report all the analytical data other than those ascribed to Brock and to the Government Laboratory, London, were obtained in this Laboratory.

The analysis of the bituminous limestone given in that report is also the work of this Laboratory.

Other samples submitted during 1926 have been gypsum, iron ore (highest Fe_2O_3 content 58%), bituminous lime stone (11% of oil by dry distillation), water and phosphatic rocks (highest P_2O_5 content 22%).

(e) Railways.

Eight samples of water submitted were reported upon as to suitability for drinking purposes and for use in locomotives.

Many of the water supplies upon which the Railways have to rely are quite unsuitable for use in boilers, especially in the Haifa area. A softening plant has now been installed at Haifa. This has decreased the scaling and corrosive properties of the water as shown by analysis, but, of course, has not reduced the priming propensities due to the excessive quantities of sodium salts.

They have had some difficulty in finding lime suitable for use in the softening plant. Although lime is produced in large quantities in Palestine the quality cannot be relied upon, some of it being little more than half burnt. The best that has been obtained contains about 90% calcium oxide. In this connection 18 samples of lime have been analysed.

(f) Public Works.

This Department has submitted several samples of water in connection with Jerusalem and Haifa water supply schemes. Nine samples of bitumen used in road surfacing have been submitted for penetration tests.

(g) Department of Agriculture and Forests.

Twenty nine specimens of viscera concerned in cases of poisoning have been submitted by Veterinary Officers.

The results are set out below.

Animal.	Number of Specimens.	Number in which poison found:		
		Arsenic.	Mercury.	Strychnine.
Cattle, horses and donkeys.	26	21	-	-
Dogs.	1	-	-	1
Fowls.	2	1	1	-
Total.	29	22	1	1

(h) Department of Antiquities.

Small quantities of chemicals and apparatus have been supplied for cleaning coins and other antiquities.

Specimens of metallic fragments (electrum) from an ancient temple site have been submitted for analysis.

(i) Other sources.

The Zionist Executive, the Hadassah Medical Organization and a few private firms and individuals have occasionally made use of the services of the laboratory.

3. NOTES AND SPECIAL INVESTIGATIONS.

(a) Legislation.

In Appendix C will be found the extracts from the Ottoman Penal Code and from the Trade Marks Ordinance under which prosecutions for adulteration and for false labelling can be instituted.

It will be noted that in Art.194 Sections 1, 2 and 3 require proof of danger to health and for that reason they are of little value in most cases of adulteration. Although Article 194 Section 5 leaves much to be desired, successful prosecutions may be obtained so long as the Magistrate is ready to accept the Analyst's opinion as to what constitutes "imitation and adulteration" in any particular article of food and drink.

Article 257 is of use chiefly to enforce municipal regulations but presumably the expression "articles of food or drink on which the natural composition is changed by fermentation............ or from any other cause" might be interpreted to cover adulteration.

The Trade Marks Ordinance has been found very useful in all cases of false labelling, so long as it can be shown that there is intention to deceive a purchaser as to the origin of the article or the identity of the manufacturer. The cases of the Jamaica rum and Arak Zahlawi noted below are instances. If there is a choice between the Ottoman Penal Code and the Trade Marks Ordinance it is invariably more satisfactory to base a prosecution on the latter as it is not open to so many interpretations as the penal code.

Practical experience in working with the above articles of the penal code during the past seven years has demonstrated the need for a special law to deal with the manufacture and sale of food and drink. Regulations could then be made defining the nature and composition of the important articles of diet and imposing certain standards of purity and methods of labelling.

With this object in view recent legislation in England, New Zealand, Cyprus and other countries is being studied and analytical data on locally produced food stuff are being accummulated.

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(b) Edible Oils.

Three important edible oils are produced in Palestine: olive oil, sesame oil, and sunflower seed oil.

An intensive sampling of edible oils started in July 1926 and still being continued has made it very evident that imported cottonseed oil is finding an increasing use as an adulterant of and as a substitute for olive oil and sesame oil.

The production of sunflower seed oil here is a recent enterprise by a company with a large modern well equipped factory which, in the face of competition from cotton seed oil, found it impossible to continue the production of sesame oil. Even sunflower seed oil, however, cannot be sold to compete with the lower grades of cotton seed oil.

(c) Alcoholic Liquors.

As the result of a prosecution instituted by this Laboratory under the above mentioned section of the Trade Marks Ordinance it was established in court that a liquor made in Palestine cannot be sold legally as "Jamaica Rum" and that the name "Arak Zahlawi" can only be applied legally to arak made in Zahle. The defence claimed that "Jamaica" and "Zahlawi" were generic terms and were intended to describe a particular kind of flavour or quality. The Court, however, held that to the ordinary purchaser they represented territorial descriptions.

These and other prosecutions appear to have had a very marked effect upon the use of spurious or deceptive labels as evidenced by recent inspections of distilleries and retail establishments.

The present situation regarding denatured alcohol differs little from that described in the 1925 report.

There are several factories now making alcohol from molasses, and the sale of this for drinking purposes and presumably for the manufacture of spurious liquors add another complication to an already complex situation. The proposed Excise Ordinance mentioned in last year's report is not yet in operation.

Excise duty under existing regulations is paid on the raw material on the basis of the amount of alcohol obtainable. As molasses alcohol is a new product here, it has become necessary to determine the yield of alcohol from that material. With this end in view samples of molasses and of alcohol obtained therefrom in a local distillery were submitted for analysis. The distillation process and measurements of vessels and distillates were under the direct supervision of an Excise Officer. As the results may be of interest they are given here:

Total reducing sugars in the molasses (average of 5 samples representing 13399 kilos).	52.5%
Total yield of alcohol calculated to absolute alcohol after one fractional redistillation.	18.6%

Approximately 95% of this yield of alcohol was collected at a strength of 82 to 94% by volume, the remaining 5% being at a strength of 40% by volume. ./.

(d) Arsenical Poisoning.

Arsenic is undoubtedly the favourite poison in Palestine, as in Egypt. In the year under review the arsenical poisoning of cattle was almost epidemic during the latter part of the summer. This coincided with the cattle plague outbreak, and it is possible that the cattle poisoners considered it a favourable opportunity.

Two forms of arsenic are used (1) white arsenic (arsenious oxide) and (2) artificial yellow or orange sulphide of Arsenic.

It is a favourite practice to conceal the arsenic in dried figs which (if for cattle poisoning) are then enclosed in a bunch of grass or straw.

It appears that the artificial sulphide owes its poisonous properties to the white arsenic it contains as an impurity. One specimen of the sulphide examined contained 50% of arsenic soluble in 2% hydrochloric acid. If sulphide of arsenic is the poison used, one expects to find some of it remaining in the stomach and intestines in the solid state. Even after much vomiting it may still be found adhering to the walls of these organs.

In a case of human poisoning in the Haifa District granules of the yellow sulphide were found adhering to the stomach and arsenic in solution was found in the liver and kidneys.

In this case the police, on searching the house of one of the accused persons, found a packet containing red sulphide of arsenic but no yellow sulphide. To satisfy the Court that the red sulphide produced could not have been the poisoning agent it was analysed and found to contain less than 1% of arsenic soluble in dilute hydrochloric acid. One tenth of a gram was also fed to a rat with no ill effects, while the same quantity of artificial yellow sulphide caused death within 24 hours.

In this same case the post mortem examination had revealed the presence of a strangulated hernia and in the trial the question naturally arose as to whether the strangulation had been brought about by the violent symptoms produced by the poison or whether it was an independent condition which could have itself accounted for the death of the individual. The Court found that death was due to arsenical poisoning. The finding of a few grains of rice and fragments of marrow skin in the stomach was an important point in connecting the accused with the crime as there was evidence that the poison had been concealed in a marrow stuffed with rice.

The sale of arsenic is subject to control under Public Health Ordinance No.4 but there is evidence that some of the sulphide is smuggled into the country. It is used locally as an ingredient in depilatory pastes.

The purchase of white arsenic, sodium arsenite, lead arsenate and Paris Green for use as insecticides is possible under permit.

Recently a sample of the four tons of white powder stored in sacks in the old Acre arsenal since Turkish times was submitted for analysis and proved to be white arsenic. It is remembered that some years ago a man was arrested in the same district for being in unlawful possession of a sack of what he appeared to think was flour. As this also proved to be white arsenic it is probable that it came from the same source.

(e) Lead in Soda Water.

Although, as mentioned in the 1925 report, the presence of lead has been almost eliminated from bottled soda water produced in local factories the same precautions cannot be applied to the small "soda fountains" existing in considerable numbers in all the larger towns. Samples taken from these fountains have contained as much as ten parts per million of lead in solution.

The fountains consist of a tinplated copper carbonating chamber connected with a water supply and a cylinder of carbon dioxide. From this chamber the carbonated water passes through a lead cooling coil (kept in ice water) to the delivery tap on the fountain. The lead contamination is derived from the cooling pipe and the amount of lead passing into solution depends upon the length of time the carbonated water is allowed to stand in the pipe.

Orders have been given to reject any carbonated water that has been standing overnight, but this does not eliminate the possibility of contamination, and if frequent rejections were enforced the function of the cooling pipe would of course be destroyed.

Pipes of pure tin are expensive and are not at present readily obtainable. Experiments are now being carried out with tinned copper cooling devices of local manufacture submitted by the S.M.O. Haifa.

(f) Jerusalem Sewage.

A weekly examination of the raw sewage from the N.W. drainage has been commenced in order to obtain data for use in future improvement schemes. The only treatment this sewage gets at present is storage for a few hours in sedimentation tanks. Analysis has demonstrated that apart from loss of solid matter the composition of the outflow from the tanks differs very little from that of the inflow of raw sewage.

Owing to the small amount of water per head of the population this sewage is excessively strong as will be seen from the following figures which are the average of 8 samples, each of which was taken at a different hour daily for 8 consecutive days in October 1926, before the onset of the winter rains.

	Parts per 100,000.
Free Ammonia (NH_3).	65.
Albuminoid Ammonia (NH_3).	14.
Total Organic Nitrogen (N).	21.
Oxygen Absorbed (3 hours at 37°C).	101.
Chlorine (Cl).	212.
Suspended matter.	485.

Owing to the continual complaints about the objectionable odour from the sewage outflow, this Laboratory has been asked whether chlorination would be practicable. A series of small scale experiments with bleaching powder had therefore been carried out. These experiments indicate that on an average the addition to the outflow of not less than 30 parts of chlorine per million would be required to effect sufficient deodorization. It was calculated that this treatment would entail an expenditure of £E.4 per day on bleaching powder and for this reason it was not given any further consideration by the authorities.

(g) Diamond Spot Fungus on Canvas.

The efficacy of the copper soap treatment mentioned in last year's report has been confirmed by subsequent experience.

Further small scale experiments have suggested the modifications in treatment necessary to ensure better penetration, and economy in soap and copper sulphate.

Other Government Departments still using untreated tents have been asked to send specimens of their unserviceable tentage for examination. From the data so far obtained the following facts appear to be generally true:-

1. The life of an untreated tent in constant use is not more than two years and there are specific cases where the fungus has rendered a new tent entirely unserviceable in one year.

2. In the case of double bell tents the inner tent remains sound although the outer one may be heavily infected.

3. On the weather side of a tent the canvas may be entirely rotten by the fungus while the lee side remains as good as new.

4. Vertical walls are less liable to infection than sloping portions of the tent and therefore any sag towards the horizontal favours infection.

It would appear from the above observations that there are definite factors influencing infection, and investigations are proceeding with a view to finding out what these factors are. With the cooperation of the Quartermaster of the Department of Police and Prisons history sheets of all tentage in that Department will be kept, and it is hoped that it will be possible to carry out control tests on tents which can be kept under close observation.

Samples examined under the Chemical Sub-section, Government Central Laboratories, Jerusalem, during the year 1926.

Material.	Jan.	Feb.	Mar.	Apr.	May.	June.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Water.	45	45	67	47	45	34	38	36	31	41	20	6	455
Milk.	345	308	336	328	329	290	330	360	312	297	285	280	3800
Alcoholic Liquors and Foods.	35	32	12	12	33	30	42	60	63	48	37	75	479
Aerated Waters and Cordials.	25	20	-	4	49	23	13	20	16	21	17	15	223
Drugs and Disinfectants.	8	12	9	8	14	17	6	7	4	7	4	10	106
Soap, Mineral Oils, and other commercial products.	-	7	7	5	12	17	6	11	38	4	11	15	133
Medico-Legal and Chemico-Legal.	14	16	7	3	1	7	10	5	10	17	13	9	112
Ores, Minerals and Metals.	-	-	-	9	4	-	-	4	1	3	4	2	27
Miscellaneous.	5	21	34	13	23	10	10	11	7	18	23	15	190
Totals.	477	461	472	429	510	428	455	514	482	456	414	427	5525

Appendix B.

Milk Analysis in the Central Laboratory & Districts - 1926.

District.	No. of samples.	No. of Prosecutions.
Jerusalem.		
Hospital Supplies.	325	43
Street Vendors.	290	
Jaffa.		
Hospital Supplies.	139	31
Street Vendors.	507	
Ramleh.	283	1
Gaza.	598	5
Tulkarem.	360	-
Haifa.		
Hospital Supplies.	22	6
Street Vendors.	589	
Acre.		
Hospital Supplies.	110	6
Street Vendors.	156	
Nablus.		
Hospital Supplies.	2	5
Street Vendors.	82	
Tiberias.	100	14
Hebron.	154	2
Special Samples.	84	
TOTAL.	3801	113

Appendix C.

THE LAW RELATING TO THE SALE OF FOOD AND DRUGS (other than Public Health Ordinance No.4 Regulating Pharmacies and Drug Stores.

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1. Ottoman Penal Code.

Article 194 amended (Gamadi 1, 1332).

(1) Whoever inserts poison or any other noxious substance into wells and water-courses and reservoirs and dams or into articles of food or drink generally and thereby endangers the public health will be put in KYUREK for a period of three to ten years.

(2) Whoever adulterates articles of food or drink or medicine or changes them or practises fraud in their original composition in a manner dangerous to health, and whoever offers such things for sale knowing that they are adulterated will be punished with imprisonment from three months to three years and with a fine of from L.T.5 to L.T.50.

(3) Whoever sells articles of food and drink and other things which are dangerous to Public Health, though there is no adulteration or change or fraud, but so that the purchaser does not know of the danger, will be punished with imprisonment for from 15 days to 3 months, and with a fine of from L.T.2½ to L.T.50.

(4) Whoever, being licensed to sell drugs, compounds any medicine and prepares it in a manner not in conformity with the doctor's order, with respect to the kind, quantity and quality, will be punished with imprisonment for from 1 month to 6 months and with a five of from L.T.2½ to L.T.50.

(5) Whoever takes an article of food or drink which though not injurious to the Public Health, is imitated and adulterated and puts it in the place of a genuine article or whoever abstracts some of the essential elements of an article partly or wholly so that its value is lessened, and puts it thus in the place of the genuine article, and offers it for sale as though it were the genuine article will be punished with imprisonment from 2 weeks to 6 months and with a fine of from L.T.2½ to L.T.50.

Article 257 amended 1 Gamadi 1332.

Whoever (a) keeps in his possession or sells articles of food and drink of which the natural composition is changed by fermentation or by dissolution or rotting or from any other cause, and (b) whoever does not take care of the cleanliness of any kind of food or drink, and (c) whoever contravenes the orders and warnings and the instructions of the Municipality concerning Public Health and the protection of the public from injury and (d) whoever is the occupier or lessee of a hotel or lodging house or an inn (khan) or a wine shop or restaurant or a coffee house or any kind of public establishment, and does not take care of its cleanliness, will be punished with a fine from 25 piastres to L.T.5 in the case of a second offence with imprisonment from 1 week to 1 month, the articles, the natural composition of which has been changed, will be confiscated.

2. Trade Marks Ordinance 1921 Art.22 Sect.(7) sub-sect (e)

(7) Any person who with intent to deceive commits or attempts to commit or aids or abets any other person in committing any of the following acts shall be guilty of an offence against this ordinance and shall be liable upon conviction to imprisonment for a period not exceeding one year and with a fine not exceeding L.E.100 or with one only of these penalties.

(e) makes, packs, or wraps, sells, stores for the purpose of sale or exposes for sale, goods so got up packed, wrapped or otherwise prepared as to lead intending purchasers to believe that they are the goods of another manufacturer or are of an origin other than their true origin.

For the purpose of this sub-section it shall be immaterial whether the goods, the packing wrapping or get-up of which is imitated bear a duly registered trade mark or not.

APPENDIX.

SUMMARY OF THE WORK CARRIED OUT BY THE MALARIA RESEARCH UNIT DURING 1926.

* * *

1. Personnel.

The staff of the unit was considerably reduced.

Dr. I.J. Kligler gave up the post of Controller on 1st April on being appointed to the Department of Hygiene at the Hebrew University but still retained connection with the Unit in an advisory capacity.

Dr. J.M. Shapiro, Field Medical Officer of the Unit, succeeded to the post of Controller.

Dr. I. Weitzman, Bacteriologist to the Unit, was transferred to a Government appointment on 1st October.

The Unit was then left with a Controller, clerk, laboratory attendant and 16 Sub-inspectors for field work.

2. Demonstration Areas and Methods of Control.

The 12 areas controlled by the Unit remained the same as in 1925, and the methods of malaria control which were not appreciably changed, were as follows:- During January and February, before the mosquito-breeding season started, houses, stables, store-rooms etc. were carefully cleared of hibernating mosquitoes either by hand-collection or by "smoking" in order to reduce the number of egg-laying mosquitoes.

At the end of March, when the heavy rains had finished and the water temperature began to rise hibernating larvae tended to come to the surface and became active and a careful examination of potential breeding places for larvae was therefore made. Anti-larval measures (Paris Green or petrolization) were then carried out and minor drainage and clearance work on swamps and streams was quickly done. Control with Paris Green (10 to 15 grammes per 100 square metres applied every 8 days), was subsequently maintained. Great care was necessary in its application to water overgrown with dense vegetation and when breeding was taking place in puddles under rocks and stones. Petrolization with mixtures of paraffin, crude oil, castor oil or cresol, was also employed in suitable places. Cresol in a greater dilution than 1 to 10,000 of the water treated, proved ineffective. The work was checked by mosquito counts in neighbouring houses and stables and by observation of the malaria incidence.

3. Malaria Situation in the Controlled Areas.

Owing to peculiarities of the rain-fall, there was more water in springs and wadies in upper and lower Galilee and less water in swamps in the coastal plain than in 1925 and the malaria picture differed accordingly from that of the previous year. Thus, there was a higher malaria incidence in Upper and

Lower Galilee and a lower incidence in the Judean districts and the coastal regions (except Zikhron Ya'aqov). A feature of the increased incidence in Galilee, was the unusually high percentage of malignant tertian malaria during the autumn prevalence of the disease.

The Ekron (Judea) area gave little trouble, most of swamps being dry as the result of several years of low rainfall. Wadi Es Sarar was dry throughout its whole length except for one portion which was cleared of vegetation by the villagers and kept free from larvae.

The Pethah Tiqva area again benefitted from the work done on the Wadis Abu Lejjah, Ishkar and 'Adas. The drainage of these wadis has reduced the area to be controlled to half its original size and has changed the prevalent type of mosquito - the stagnant pools which previously bred A.elutus most of the year, having been converted into running streams in which A.sergenti may breed in the autumn. In the northern part of the area, however, Raanania and Herzlia were invaded by A.elutus from Nahr el Faliq and Birket Ramadan, which are about six kilometres from the colonies. The Wadi Musrara, which runs through the suburbs and settlements to the north of Tel Aviv and was resp-onsible for an outbreak of malaria in 1924, was carefully controlled by means of Paris Green. This careful control reduced the incidence of primary malaria among the colony population of some 800 persons living near the wadi, from 0.7% in 1925 to 0.2% in 1926.

The Hedera area presented less difficulty than in the previous year, since the Birket 'Ata dried up earlier. The Birket Battikh, however, also contributed mosquitoes to the area and until drained is difficult to control. As the result of drainage of the Cherkas Swamp, the incidence of malaria in the colony of Gan Shemuel was much reduced. The colony was, however, affected to some extent by breeding in the Birket Battikh and the careful screening of houses and the removal of six chronic malaria carriers from the colony may also have contributed to the reduced incidence.

The Yajur (Kishon) area was much more difficult of control than in 1925 owing to the greatly increased amount of water in the Kishon River. The eastern part of the river dried up to a large extent in the summer leaving only a number of pools fed by seepage, in the bed. The drying up did not take place until the middle of June while in 1925 it was complete by the first week of May. There was only one small settlement directly affected by the eastern Kishon and an attempt was made therefore to control this part of the river with Paris Green without preliminary channelling but the results were not so successful as in the western portion where in addition to chemical control, the river bed was channelled and pools kept clear of vegetation. Thus A.elutus breeding took place in the eastern part of the river and in June the malaria incidence in the settlement of Sheik Abriek was 9%. The settlements affected by the west part of the Kishon had a lower incidence than in 1925 and the highest malaria rate during June in any of these settlements was 2.3%. The cost of control in the Yajur area (excluding Gedda) was £E.420 or, for the population of 2300 persons, P.T.18.2 per head.

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Lower Galilee. There was an increased malaria incidence. A.superpictus and A.sergenti were unusually prevalent at the beginning of the year and this prevalence continued throughout the year in the Jordan area. Systematic and frequent mosquito catching in settlements was therefore carried out. In the spring, an extensive area was flooded by the Jordan and swamps were left in which A.elutus breeding took place. Careful control measures and systematic mosquito destruction were practised and the malaria incidence did not exceed 1.1% in May and June and 0.2% in July. As has been pointed out previously, the Jordan River itself breeds A.elutus in the spring and A.sergenti with A.elutus in the autumn. Breeding in the whole area was very carefully controlled but in the last three months of the year an invasion by Anophelines which probably come from uncontrolled breeding places three or four kilometres away, took place.

Upper Galilee. The area has never presented difficulties in the spring; the swamps are small and easily controlled. Each year in the autumn mosquitoes which are thought to come from the large uncontrolled swamps of Lake Hule, six kilometres distant, invade the area. Although it is difficult to believe that mosquitoes fly so far, it is the repeated experience of several years which has led to this conclusion. As compared with the autumn of the previous year, mosquitoes in the settlements of Rosh Pinna, Ayeleth, Mishmar and Mahanayim etc. were very much more numerous. Thus, a search in Rosh Pinna on November 11th 1925, showed only 1 to 3 Anophelines (A.sergenti and A.elutus) per room, while a similar search by the same man on November 11th 1926, revealed 100 to 300 Anophelines(of which 90% were A.elutus), all with developed ovaries (there were no males).

The increase in the numbers of mosquitoes was followed by a sharp rise in the malaria rate throughout Upper Galilee, which was well illustrated by Rosh Pinna where in December 1925, the incidence of primary cases was 1.2% and in December 1926, 11.9%

Metulla Area. In this area also the situation was more serious than in 1925. Springs and swamps were well controlled but the Hule marshes are only 3½ kilometres away from the settlements of Kefar Gileadi and Tel Hai, and these marshes and the springs and streams which feed them undoubtedly gave rise to much greater mosquito production than in any recent year. Even the colony of Metulla which was considered to be a malaria free place, was affected and the percentage of primary cases rose from 0.9% in December 1925 to 6.0 in December 1926.

4. Seasonal Distribution of Malaria.

Usually there is a rise of benign tertian malaria in June and July and then a decline, and a marked rise of malignant tertian malaria in October and November. In 1926 the amount of benign tertian malaria was less than usual in June and July but instead of decreasing subsequently it continued steadily to rise until it reached its maximum in November. The malignant tertian malaria did not differ much from the previous two years either in amount or in the character of its curve.

Thus in the Kinnereth region the incidence of primary cases was:-

	Benign Tertian.			Malignant Tertian.		
	1924.	1925.	1926.	1924.	1925.	1926.
September.	0.25	0.25	0.9	0.0	0.0	0.0
October.	1.2	0.75	6.7	0.25	0.5	0.5
November.	1.2	2.5	6.9	3.0	1.7	0.7
December.	1.0	2.0	7.3	1.2	0.25	0.2

The difference in the malaria incidence between the years 1925 and 1926 was considered to be due to abnormally heavy breeding in uncontrolled areas during the latter year and to an influx of mosquitoes from these areas into the controlled areas.

5. Antimosquito Work.

The destruction of hibernating mosquitoes in the late winter has been mentioned in section 2. During the summer and autumn owing to the heavy invasion of the controlled areas in Galilee by mosquitoes from uncontrolled sources, the bi-weekly catching of mosquitoes in houses, stables and store-rooms was instituted as the only measure possible to relieve the situation.

A comparison of places where this systematic destruction of mosquitoes was carried out with other invaded places, appeared to show that the measure was effective in preventing a high incidence of malaria. It was noticed that the malaria rate did not exceed 2% when the average number of Anophelines per house throughout a colony was not more than three.

6. Drainage Schemes.

Owing to the abolition of the engineering section of the Unit fewer drainage schemes were prepared and carried out. The Sanitary Engineer of the Department of Health, however, assisted in the preparation and supervision of a number of schemes. Work on the Cherkas Swamp was continued and subsoil drains and relief wells were constructed to get rid of water under pressure lying below the nearly impervious top stratum of earth.

A special grant was made by the Joint Distribution Committee to drain permanently the small swamps near the antiquities site of Megiddo. The work consisted largely of subsoil tile drainage.

At Beith Gan in Lower Galilee a small scheme was carried out to which the colony contributed the labour and the Unit the expert supervision, subsoil drain pipes and other materials.

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A complete survey of the Wadi Musrara was made in cooperation with the Malaria Survey Section and under the direction of the Controller of the Section; and the M.R.U. also assisted in the survey of that part of the Nahr Rubin which flows through Jewish land.

7. Sanitary Activities of the Unit.

It was decided that the Unit should engage in sanitary work in the Jewish colonies on an increased scale. A serious outbreak of typhoid in the colonies of the Emek where the sanitary conditions were conducive to a rapid spread of the epidemic, made the increased sanitary help of the Unit particularly opportune. Special attention was paid to the installation of standard pattern fly-proof pit latrines, to the purification of water supplies and to refuse disposal and general cleanliness, and some valuable epidemiological investigations were made.